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Editor, P. C. DAY, Climatologist and Chief of Division.

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CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT NO. 1, NORTH ATLANTIC STATES.

Prof. WILFORD M. WILSON, District Editor.

GENERAL SUMMARY.

December, 1912, was strikingly similar in its weather conditions to December, 1911, and was one of the most favorable and agreeable winter months ever experienced in the North Atlantic States. In all sections the average temperatures were not more than about one or two degrees below the highest known averages for December. There was remarkable freedom from sudden and decided changes in temperature, and at most stations there were not more than six days when the temperatures were below normal.

The unusually warm weather and the shortness of the storm periods gave splendid opportunities for carrying on all kinds of outdoor work. The precipitation was light before the 19th, so that highways remained in remarkably good condition until that date, but in the coast regions from New Jersey northward the storms that came later in the month made the total precipitation considerably more than the usual amount for December.

The heaviest snowfall of the season up to the time of this writing occurred on the 24th; the amounts varied from 2 or 3 inches at interior stations to about 18 or 20 inches at some of the stations near the coast in New York and adjacent States. However, the greater part of this snow was melted within three days after it fell.

The following table exhibits the leading features of meteorological interest for the various sections of the district:

		Tempen	ature.			Precipit	ation.		A ver	
States, or parts of States, within district No. 1.	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Rainy days.	Clear days.
New England New York Pennsylvania New Jersey Maryland, Delaware, and Dis-	32.6	+5.4 +6.2 +4.1 +3.7	69 67 71 68	-15 - 5 - 4 - 1	4.34 3.32 3.63 4.73	+1.07 +0.02 +0.49 +0.90	7. 44 7. 27 6. 48 6. 33	1.21 1.21 1.12 3.40	8 9 8 9	13 10 11 12
trict of Columbia West Virginia Virginia	39. 0 35. 3 39. 1	+4.0 +3.1 +3.7	75 73 75	- 6 3	3.97 2.58 3.33	+0.51 -0.39 $+0.42$	5. 25 3. 75 3. 95	1. 81 1. 45 2. 81	9 7 9	14 10 12

TEMPERATURE.

The average temperature for the district was nearly 35°, which is about 5° above the December normal. The means reported ranged from 17.1° at Van Buren, Me., to 46.4° at Eastville, Va. The excess in temperature varied from about 3° in some parts of the district to more than 7° in others. Temperatures were well above the seasonal average at nearly all stations except during three brief cold periods, the first of which came on the 8th and 9th, the second on the 12th and 13th, and the third about the 26th. The lowest temperatures of the month occurred in one or another of these three periods in practically all parts of the district, chiefly on the 9th in the northern sections and on the 26th in the southern. Temperatures of zero or below occurred at only 9 stations

in Maine, 2 in New Hampshire, 3 in Vermont, 2 in Connecticut, 3 in New York, 5 in Pennsylvania, 3 in New Jersey, 2 in West Virginia, and 1 in Maryland, and were observed at none of the stations in Virginia, Delaware, Rhode Island, or Massachusetts.

On the warmest day, the 6th, the temperatures were about 20° above the normal, and in some cases the maximum temperatures on that date exceeded all December records. Readings of 65° or over were observed on the 6th at numerous points throughout the district, except in the northern New England States.

PRECIPITATION.

The number of days with measurable precipitation varied at different stations from 4 to 18, and a similar lack of uniformity appears in the total amounts for the month, quite a number of stations receiving less than 2 inches, while not less than 19 reported totals exceeding 6 inches. The period extending from the 7th to the 17th, inclusive, was remarkably free from rains and snows, making the month seem unusually agreeable, yet fully two-thirds of the stations in the district recorded more than the normal amount of precipitation for December. Rain or snow was quite general on six dates, the 2d, 6th, 19th, 24th, 27th, and 30th. The precipitation on other dates was of little importance, being light and scattered, except that in some sections storms on dates given above covered in addition a preceding or following day.

The snowfall was light to moderate in amount and caused merely temporary interruption to traffic, as the mild weather did not permit much snow to remain unmelted long. Light snows fell on numerous dates in the northern States, but in Maryland, Delaware, New Jersey, and Virginia there was practically no snowfall except on the 24th, on which date heavy snow fell in nearly all parts of the district. At many stations in Delaware, New Jersey, and New York, the snowfall of that date exceeded 10 inches; at Scarsdale, N. Y., it amounted to 20 inches.

RIVER CONDITIONS.

Owing to the deficiency in precipitation during November and more than the first half of December, rivers reached moderately low stages before the occurrence of the heavier storms that came toward the end of the month. Hence, no floods resulted notwithstanding the mild character of the weather. Moreover, the precipitation was not much above the normal December amount, except near the coast, where the principal rivers received only a small portion of the run-off.

SUNSHINE.

The average number of hours of sunshine for representative stations was 142. The percentage of the possible sunshine averaged 54, the same as in the preceding month, and ranged from 65 at Atlantic City, N. J., to 35 at Albany, N. Y. The average number of clear days for all stations was 12, of partly cloudy days 9, and cloudy days 10.

Table 1.—Climatological data for December, 1912. District No. 1, North Atlantic States.

			years.	Tem	perature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in inc	ehes.	days, re.		Sky.		d.rec-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	De	cloudy days.	Prevailing wind then.	Observers.
Maine.																				
Bar Harbor Cornish Eastport Fairfield Farmington Gardiner	Washington Somerset Franklin	20 778 53 90 450 163	26 57 40 27 15 20	31.4 28.7 26.2 25.8	+ 3.8 + 6.2 + 3.4 + 4.5 + 8.3 + 7.1	58 50 50 52 59	6 6 3 7 3	7 5 1 4 3 2 - 5	22† 25 13 23 9† 25	43 40 31 31 32 45	4.09 5.83	+ 1.78 + 0.46 + 1.86 + 0.79 - 0.74 - 0.05	2. 05 1. 03 1. 64 1. 25 0. 88 0. 91	5.5 10.8 6.9 8.2 9.5 8.0	10 7 14 5 6 11	16 13 11 14 12 16	7 10 6 7 6 1	8 14 10 13 14	nw. sw. sw. nw. sw.	William Miller. T. H. West. U. S. Weather Bureau. E. F. Parker. State Normal School. Samuel D. Soule.
Green ville Houlton Lewiston Madisson Millinocket North Bridgton Orono Patten Portland Presque Isle Rumford Falls Van Buren Winslow	Piscataquis. Aroostook. Androscoggin. Somerset. Penobscot. Cumberland Penobscot. do. Cumberland Aroostook. Oxford. Aroostook.	1, 140 362 185 257 386 450 129 550 99	8 10 38 9 9 19 43 10 41 3 19 9 17	22. 2 26. 4 28. 6 23. 2 23. 0 29. 6 27. 8 20. 2d 32. 3 20. 0	+ 5.2 + 5.9 + 6.5 + 4.8 + 5.5	47 45 51 50 46 56 52 50d 58 58 53 39 51	7 5† 2 7 3† 6 3	- 5 - 8 6 - 8 - 4 5 - 5 - 6 d 9 - 15 3 - 15 - 1	9 13 9 29 13 9 29 13 9 13 9 13† 29	36 38 33 40 40 36 40 42 27 52 28 37 39		- 0.72 - 0.03 - 0.22 + 0.06 - 0.28 - 0.52 - 0.35 - 0.35 - 0.45	0.60 1.00 1.04 0.91 0.93 0.90 0.81 0.60 1.10 0.70 0.76 0.93	8.0 12.0 11.1 6.8 8.5 8.0 10.0 6.0 4.7 8.5 7.8 2.2 8.3	8 6 9 7 9 5 7 4 8 6 7 8 6	21 14 22 14 11 10 9d 14 17 13 12 16	2 10 0 2 11 10 4d 8 2 12 3 2	8 7 9 15 9 11 14d 9 12 6 16 13	n. nw. w. nw. sw. nw. sw. nw. sw. nw. sw.	U. S. Weather Bureau. Bangor & Aroostook R. R. Union Water Power Co. William Jardine. F. C. Bowler. G. E. Chadbourne. Agricultural Exp. Station. Bangor & Aroostook R. R. U. S. Weather Bureau. S. L. Merriman. Charles A. Mixer. J. M. Thomas. Hollingsworth & Whitney Co.
New Hampshire. Alstead Center Benton Bethlehem Concord Durham Franklin Grafton Hanover Keene Nashua Newton Plymouth	Graftondo Merrimack Stafford Merrimack Graftondo Cheshire Hillsboro Rockingham	1, 120 1, 470 350 88 440 863 603 506 125	8 3 20 52 17 13 26 78 27 27 24 24	27. 2 26. 2 31. 8 29. 9 31. 0 28. 1 29. 2 30. 2 32. 9 32. 5	+ 6.2 + 5.6 + 5.4 + 1.6 + 7.4 + 6.3 + 7.8 + 4.6 + 5.2 + 4.8 + 6.0	58 56 56 61 55 60 58 62 58 64 64 59	6 6 6 6 6 6 6 6 6 7	- 4 - 6 8 7 5 2 2 2 2 7 8 4	9 9 9 9 9 9 9 9 9 25 25 9	32 38 40 35 32 36 36 34 32 31 33 35	3.35 2.64 3.71 3.84 3.84 3.12 2.60 3.93 3.82 3.84	+ 0.79 + 0.32 + 0.36 + 0.97 + 0.68 + 0.81 + 0.22 + 1.19 + 0.45 + 0.99 + 0.30	1. 15 1. 53 0. 66 1. 23 1. 06 0. 96 0. 84 0. 65 1. 20 1. 08 1. 04 1. 07	13. 0 18. 5 10. 0 6. 7 5. 0 10. 5 11. 0 8. 0 4. 8 7. 0 3. 5 9. 5	7 5 8 7 10 9 7	17 19 10 11 14 13 16 8 9	4 3 11 10 8 8 4 9 13	10 9 10 10 9 10 11 14 9	sw. nw. w. nw. sw. nw. nw. sw.	Frank Dewing. State Sanatorium. Benjamin Tucker. U. S. Weather Bureau. Agricultural Exp. Station. Dr. C. P. Webster. P. R. Kimball. Dartmouth College. Samuel Wadsworth. Jackson Co. W. C. Gale. Hattle G. Trow.
Vermont. Bloomfield	Windsor Orange Bennington Windham Caledonia	910 840 980 2,096 711 700	5 9 17 13 19 20	29.60 27.4 31.0 28.2 26.7	+ 6.2 + 6.0 + 9.1	53 62 65 60 57 56 60	7 6 6 6 6 7 6	-10 -3 -3 5 -5 -1 6	22 9 9 9 25 22 9	43 35 41 34 33 34 37	3.59 6.36 2.97		0.65	7.0 6.0 6.0 7.5 23.9 9.4 9.5	7 7 15 12	12 10 4 8 11 8	7 9 9 7 8 4	12 18 16 12 19	S. W. W. SW. SW.	Lyman Falls Power Co. E. D. Kingsbury. W. F. Dewey. N. M. Canfield. J. Albert Holmes. Fairbanks Museum. John S. Eaton.
Massachuscits. Amherst. Blue Hill Boston. Chestnut Hill Clinton. Concord. Fall River Fitchburg. Framingham. Hyannis Lawrence Lowell Middleboro Nantucket. New Bedford Norfolk. Plymouth Provincetown. Rockport. Rutland Turners Falls Westboro Williamstown. Worcester. Rhode Island.	Norfolk Suffolk do Worcester Middlesex Bristol Worcester Middlesex Barnstable Essex Middlesex Hlymouth Nantucket Bristol Norfolk Plymouth Barnstable Essex Worcester Franklin Worcester	222 640 124 124 127 139 200 550 160 31 151 100 53 3 15 88 88 244 40 20 20 20 20 166 21 166 21 25 25 26 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	23 28 42 32 16 29 32 21 28 27 26 26 100 9 27 25 10 10 21 38 31 20	35. 1 38. 5 37. 9 33. 4 37. 1 34. 1 35. 9 33. 5 36. 0 34. 6 40. 4 38. 2 34. 4 39. 2 37. 4 30. 7 34. 2 35. 8	+ 5.8 + 5.3 + 6.9 + 7.5 + 6.0 + 2.9 + 5.6 + 5.6 + 3.7 + 4.1 + 8.7 + 5.6 + 4.4 + 4.4	62 67 60 64 66 63 64 63 57 58 60 66 66 66 65 61	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	10 0 20 16 14 19 14 16 13 14 9	9 9 9† 9 9† 8 9 13 9	25 27 30 26 34 32 33 37 25	5. 03 4. 85 5. 95 3. 91 5. 02 7. 44 4. 53 4. 38 6. 09 6. 25 6. 93 5. 57 5. 20 5. 95 4. 16 4. 47 3. 59 4. 10	+ 2. 28 + 1.955 + 1.515 + 2.525 + 0.366 + 1.39 + 3.94 + 1.322 + 0.83 + 2.888 + 2.61 + 1.48 + 0.87 + 1.19 + 0.95 + 0.95	1. 28 1. 32 1. 29 1. 30 0. 95 1. 27 1. 32 1. 26 1. 41 1. 56 1. 64 1. 32 1. 28 1. 60 1. 24 1. 35 1. 40 1. 07	8.7 12.0 7.0 8.0 0.6 7.3 7.5 11.2 9.3	11 77 99 88 88 88 77 98 88 11 81 11 77 66 10 88	14	11 4 1 3 0 12 3 20	10 12 11 12 11 9 14 9	W. SW. SW. W. SW. NW. DW. SW. SW. SW.	Agricultural Exp. Station. Blue Hill Observatory. U. S. Weather Bureau. Met. Water Board. Do. Fred A. Tower. C. V. S. Remington. Dr. A. P. Mason. Met. Water Board. C. F. Sleeper. Essex Co. Props. Locks & Canals. A. R. Gurney. U. S. Weather Bureau. City Engineer. Ruby H. Martyn. Laura B. Knapp. Gideon Bowley. C. F. P. Bearse. State Sanatorium. Turners Falls Co. G. S. Newcomb. Williams College. G. W. Swan.
Block Island Bristol Kingston Narragansett Pier Providence	Bristol Washington Newport	26 53 250 22 182	32 26 23 30 8	38.5 34.8 37.8	+ 4.4 + 4.9 + 3.1 + 4.3 + 5.8	58 60 58	2 6 6 2 6	18 17 11 14 14	9 9 9 9	30	6. 14 6. 87 6. 84	+ 1.84 + 2.83 + 3.14 + 3.32 + 2.20	1.48 1.59 1.51	10.0	7 7 8	19	10 10 2	13 5 8 10 10	W. SW.	U. S. Weather Bureau. N. G. Herreshoff. Nathaniel Helme. U. S. Weather Bureau. Do.
Connecticut. Bridgeport. Canton Colchester. Cream Hill. Danielson. Hartford. Hawleyville. New Haven. New London. North Grosvenor Dale. Norwalk. Southington. Storrs. Torrington.	Hartford New London Litchfield Windham Hartford Fairfield New Haven New London Windham Fairfield Hartford Tolland Litchfield	300 159 600 127 47 400 116 140 640 625	19 51 26 16 10 8 14 125 42 22 22 43 24 11 27	34.3 31.3 34.0 36.5 36.0 37.8 39.0 33.0 34.0 35.0	+ 5.9 + 2.3 + 5.4 + 6.7 + 8.0 + 6.3 + 3.4 + 2.6 + 6.2	67 65 61 70 67 65 58 66 63 65 65 64	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	8 17 15 0 4 3	24 25 25 26	33 28 34 28 40 24 28 39 36 35	6. 27 4. 03 6. 78 4. 46 4. 25 6. 04 5. 89 5. 52 5. 16 6. 23	+ 0.65 + 2.97 - 0.65 + 0.89 - 0.59 + 2.39 + 2.61 + 2.09 + 2.36 + 1.74	1.75 0.89 1.58 1.14 1.30 1.52 1.34 1.60 1.10	5.0 15.0 13.0 10.0 7.0 12.1 12.0 8.1 7.1 10.0	00 60 88 00 111 00 60 77 70 77 80	13 12 17 13 9 12 10 14 14 14 14 11 11	7 8 2 9 7 5 10 10 6 10 14 14	9 15 14 11 7 11 7 6	SW. W. SW. SW. DW. SW. SW. DW. SW. SW. DW. SW. W. SW. DW. SW. DW. SW. DW. SW. DW. SW. DW. SW. SW. DW. SW. SW. DW. SW. SW. DW. SW. DW. SW. SW. SW. DW. SW. DW. SW. SW. DW. DW. SW. SW. DW. DW. SW. SW. DW. DW. SW. SW. DW. DW. DW. DW. DW. DW. DW. DW. DW. D	William Jennings. G. J. Case. S. P. Willard. C. L. Gold. F. E. Bitgood. U. S. Weather Bureau. C. B. Hawley. U. S. Weather Bureau. Thos. C. Dillon. Grosvenor Dale Co. George C. Comstock. Luman Andrews. Agricultural Exp. Station. Prof. E. H. Forbes. J. L. Herbert. N. J. Welton.

 $\textbf{Table 1.--Climatological data for December, 1912. \ District No. 1---Continued.}$

			years	Temp	perature	e, in c	legre	es Fab	renh	neit.	Prec	eipitation	, in in		days,		Sky.		direc	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	of rainy	day	Number of part- ly cloudy days.	n m p	Prevailing wind tion.	Observers.
New York.																				
New York. Addison Albany. Alfred. Amsterdam Athens. Ballston Lake Beelford Beerston Binghampton Bouckville. Boyds Corners Carmel. Chatham Cooperstown Cortland. Cutchogue De Ruyter Elmira. Ephratah Glens Falls Gloversville Greenfield Center Greenwich. Griffin Corners Haskinville Homer. Heosick Falls Indian Lake effersonville Liberty Little Falls Mohonk Lake Morehouseville Morrisville Morrisville Month Lake Morehouseville Morrisville Month Lake Morehouseville Morrisville Month Lake Morehouseville Morrisville Mount MeGregor Mount Hope Newark Valley New Berlin New Lisbon New York City North Creek North Vicele.	Albany Allegany Montgomery Greene Saratoga Westchester Delaware Broome Madison Putnam do Columbia Otsego Saratoga Cortand Suffolk Madison Chemung Fulton Warren Fulton Saratoga Washington Delaware Steuben Cortland Rensselaer Hamilton Suffivan do Herkimer Ulster Hamilton Madison Saratoga Westchester Tioga Chenango Otsego New York		222 91 177 8 10 21 11 55 50 13 9 0 21 22 20 14 14 15 12 17 21 10 11 11 11 11 11 11 11 11 11 11 11 11	34. 2 31. 0 35. 4 30. 6 34. 0 30. 8 33. 6 29. 8 32. 4 31. 1 31. 1 33. 8 31. 6 32. 2 32. 2 29. 4 31. 5 29. 4 30. 6 30. 6 30. 6 30. 6 30. 6 30. 6 8 36. 8	+ 5.9 + 6.7 + 5.6 + 8.3 + 3.6 + 5.9 + 7.3 + 3.7 + 9.3 + 6.5 + 7.6 + 6.4 + 4.8 + 6.9 + 7.0 + 8.4 + 7.0 + 7.2 + 7.2 + 7.2 + 5.5 + 6.7 + 7.2 + 6.2 + 5.5 + 4.1	58		5 8 - 5 2	1 26 12 9 9 9 9		2.45 3.22 2.59 4.55 2.77 2.57 7.20 3.05 2.77 2.57 7.20 4.46 4.39 3.05 2.77 7.20 2.65 1.33 3.17 3.17 2.80 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4	+ 0.12 - 0.40 + 0.18 - 0.89 + 1.85 - 0.34 - 1.09 - 0.23 - 0.63 + 0.42 - 0.90 - 0.91 + 0.98	0. 42 0. 82 0. 67 0. 50 0. 87 0. 62 1. 16 0. 61 0. 49 0. 85 0. 70 0. 72 1. 91 0. 65 0. 72 1. 91 0. 65 0. 80 1. 05 0. 80 1. 05 0. 80 1. 05 0. 80 1. 05 0. 80	4.55.5.5.7.7.7.0 2.55.6.0 9.4.5.13.5.5.5.6.0 4.15.0 9.4.4.0 10.0 0.0 10.0 0.0 4.5.7.5.0 10.0 4.5.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	10 8 12 7 17 17 8 8 8 9 5 6	17 12 10 15 8 3 5 19 10 19 7 15 13 11 11 7 8 8 12 12 14 12 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18		10 10 15 10 9 11 12 7 8	SW. S.	Charles C. Mortimer. Sanford L. Cluett. Lester Severie, jr. Charles Willert, jr. Dr. H. M. King. O. J. Dempster. A. K. Smiley. Theo. C. Remonda. Prof. I. M. Charlton. F. W. Tooker.
orthylle meonta Dxford Dxford Oxford	Otsego Chenango Nassau Orange Nassau Herkimer Westchester Suffolk Chenango Suffolk Putnam	1,112 916 40 470 215 1,526 200 40 36 310 1,300	18 47 8 28 0 15 8 27 5 11 7	31. 1 40. 3 33. 5 37. 4 26. 0 36. 4 39. 0	+ 6.0 + 5.5 + 5.1 + 5.5 + 4.5 + 5.9	62 46 65 65 61 49 64 63 58	6† 6† 7 6 6† 2† 6 6	11 11 18 5 12 - 2 15 20		33 34 33 37	2. 29 3. 32 4. 28 4. 03 5. 62 3. 72 6. 26 4. 95	$\begin{array}{c} -0.86 \\ +0.25 \\ +0.51 \\ +0.61 \\ +0.98 \\ +1.91 \\ +0.46 \end{array}$	0. 62 0. 88 1. 53 1. 01 1. 70 0. 95 2. 00 1. 55 1. 63	8. 2 11. 5 2. 3 6. 9 13. 0 14. 0 20. 0 9. 0	9 13 6 10 10 12 7 7	9 4 21 11 17 13 18 15	5 12 0 13 4 10 5 7	17 15 10 7 10 8 8 9	SW. W. SW. SW. SW. W. SW. SW.	H. W. Lee. J. P. Davis. Prof. Thomas Colby. W. H. Nearpass. C. H. Hechler. O. J. Dem.pster. C. H. Wilmarth. Selal. B. Strong. E. B. Collins. W. L. Jagger. Thomas Manning. H. F. Bilderbeck.
pier Falls 'renton Falls 'ribeshill 'Jtica Wading River Vappingers Falls Varwick Vaverly Was Berne West Berne Windham Pennsylvania.	Saratoga Oneida. Montgomery Oneida. Suffolk Dutchess. Orange Tioga. Albany Orange.	751 268 537 112 110 538 824 946 167 1,520	11 9 9 46 6 22 18 30 13 63 12	30. 2 37. 8 35. 2 33. 6 32. 4 37. 7	+ 6.8 + 7.1 + 5.6 + 8.5 + 6.4 + 7.7	66	6	5 9 14 2 4 15 6	8	31 26 43 36 30	3.71 3.41 3.10 3.55 6.97 4.41 3.57 1.81 1.21 5.00	+ 0.17 + 0.22 + 0.56 + 0.51	1. 01 0. 90 1. 20 0. 75 2. 02 1. 42 1. 10 0. 55 0. 40 1. 33 0. 54	7.0 6.0 18.0 10.0 8.0 7.0 8.0 5.5 5.0	8 15 5 11 8 8 8 10 7	5	17 1 12 8 10 9 14	9	S. Se. SW. nw. W.	George E. Fifield. C. W. Young.
Bethlehem. Clearfield. Drifton. Emporium Ephrata Everett. George School. Gettysburg. Gordon. Hamburg. Harrisburg. Huntingdon. Hyndman. Lancaster. Lawrenceville. Lebanon. Le Roy. Look Haven. Marion. Mauch Chunk. Miffintown. Mifford. Montrose. New Germantown. Philadelphia Pocono Lake.	Clearfield. Luzerne. Cameron Lancaster Bedford. Bucks. Adams. Schuylkill. Berks. Dauphin. Huntingdon. Bedford. Lancaster Tioga. Lebanon. Bradford. Clinton. Franklin. Carbon. Juniata. Pike. Susquehanna. Perry Philadelphia.	260 1, 107 1, 633 1, 950 184 1, 980 184 600 184 650 977 255 1, 006 458 1, 400 560 640 634 445 455 1, 658 17 1, 662	11 4 14 125 12 14 5 38 8 16 24 25 19 14 25 23 24 8 8 8 8 8 8 8 8 8 8 8 8 8	33. 7 30. 4 31. 8 35. 6 34. 6 32. 7 33. 2 36. 6 32. 7 33. 2 35. 4 33. 8 32. 4 33. 8 32. 4 33. 8 34. 6 35. 5 4 33. 8 31. 5 30. 8 31.	+ 2.0 + 1.9 + 5.3 + 5.2 + 3.0 + 0.6 + 3.8 + 4.1	70 65 67 62 66 70 67 65 59 69	7 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	56 56 56 56 11 32 -2 113 14 33 -3 66 -2 9 10 25 00 35 55 19 19	26 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26	30 34 39 46 31 27 35 21	2 37 5 30 2 32 4 35 1 96 4 40 4 51 4 85 4 97 3 83 2 43 2 72 5 34 1 80 4 03 1 84 2 44 3 39 5 52 3 18 4 .51 2 .10 2 .10	+ 1.08 + 1.18 - 0.76 + 2.90 - 0.89 + .38 - 1.34 - 0.87 + 1.30	1.30 0.86 1.15 0.81 1.38 0.78 1.25 2.16 0.50 0.80 0.80 0.70 1.12 0.50 0.55 0.87 0.70 0.97 0.97 0.97 0.97	13.5 5.9 15.0 3.5 10.0 6.0 9.0 13.0 10.0 9.4 5.0 11.0 7.0 7.0 6.5 5.2 11.0 6.5 5.8 10.0 5.5 12.0	9 9 9 4 4 133 9 9 6 6 6 9 8 8 6 7 7 5 9 9 13 7 8 8 8 8 10 6 7 7 133 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 16 8 8 16 13 13 177 100 111 13 15 5 14 5 5 1 1 12 12 111 13 8 8 13 9	10 11 3 15 5 8 6 5 5 11 5 8 6 4 9 9 9 17 7 7 7 11 5 5 11 15 15 15 15 15 15 15 15 15 15		Se. W. Se. W. W. SW. SW. Se. S. W. W. Se. Se. S. W. Se. S. W. Se. S. W. SW. SW.	Prof. E. C. Roest. Raymond C. Ogden, Eckley B. Coxe, jr. T. B. Lloyd. W. L. Frantz. B. L. Steckman. N. W. Swayne. Col. E. B. Cope. Capt. J. G. Johnson. W. J. Kalbach. U. S. Weather Bureau. Prof. W. J. Swigart. H. Somers Fischer. F. H. Shaw. C. P. Darling. Harry M. Schott. G. W. T. Warburton. Prof. J. A. Robb. Hon. C. B. Hege. F. C. Wintermute. Wellington Smith. Mrs. Alla Doughty. Silas Jagger. Ed. C. Johnston. U. S. Weather Bureau.

Table 1.—Climatological data for December, 1912. District No. 1—Continued.

			years	Tem	peratur	e, in	degre	ees Fab	renl	heit.	Pre	eipitation	, in in		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Numb rofrainy da 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind	Observers.
Pennsylvania—Contd.																				
Reading. cranton scinisgrove. state College Fowanda. Wellsboro. West Chester.	Lackawanna Snyder. Center Bradford. Tioga Chester.	280 805 455 1,191 754 1,327 455 530	39 12 24 24 17 35 58 22	36. 5 35. 5 33. 8 34. 2 33. 8 33. 2 37. 4 37. 9	+ 3.7 + 5.8 + 2.5 + 4.1 + 5.0 + 4.3 + 4.1 + 7.6	68 65 66 64 65 63 68 66	6 6 6 6 6 6 6	9 13 5 10 8 6 16 10	26 9 25 13 29 26 9† 9	25 27 32 29 37 42 28 49	2.32 1.71 2.26 5.50	$\begin{array}{c} +\ 1.21 \\ +\ 1.46 \\ +\ .72 \\ -\ 0.60 \\ -\ 0.97 \\ -\ 1.16 \\ +\ 1.53 \\ -\ 0.48 \end{array}$	1. 44 0. 84 1. 14 0. 53 0. 70 0. 51 1. 80 0. 61	10.8 5.7 7.0 8.6 4.9 5.0 9.5 7.0	10 10 9 11 8 7 11 8	9 2 0 8 17 7 19	9 12 21 5 6 15 2	13 17 10 18 8 9 10	nw. s. sw. sw. sw. sw. sw.	U. S. Weather Bureau. Do. J. M. Boyer, C. E. Prof. Wm. Frear. Hiram E. Bull, C. E. O. L. White. J. C. Green, D. D. S. Henry H. Guise.
New Jersey.	Atlantic	16	39	41.4	+ 5.0	67	6	19	13	22	4. 23	+ 0.49	1.00	4.7	11	12	8	11	w.	U. S. Weather Bureau.
Sayonne. Selvidere. Selvidere. Sergen Point. Soonton Stridgeton. Burlington. Ape May City harlotteburg. layton. hulver's Lake. Dover. Clizabeth. lemington laddonfield lammonton lightstown	Hudson Warren Hudson Morris Cumberland Burlington Cape May Passaic Gloucester Sussex Morris Union Hunterdon Camden Atlantic Mercer Bergen Monmouth Burlington Hunterdon Coanden Atlantic Mercer Bergen Monmouth Burlington Hunterdon Sussex Passaic Monmouth Burlington Hunterdon Sussex Passaic Warren Union Atlantic Warren Union Atlantic Morris Sussex Atlantic Passaic Warren Union Atlantic Morris Somerset Essex Sussex Sussex Sussex Atlantic Morris Somerset Essex Sussex Sussex Sussex Sussex Atlantic Morris Somerset Essex Sussex	500 2899 37 230 37 230 37 230 37 230 37 719 126 848 600 455 103 119 107 76 61 107 76 54 95 550 107 75 30 75 30 75 30 67 88 88 88 88 88 88 88 88 88 8	222 222 223 316 344 25 26 333 24 25 26 26 27 28 33 32 42 25 10 25 50 26 26 27 28 28 33 40 20 20 20 20 20 20 20 20 20 20 20 20 20	38. 2 34. 1 37. 6 39. 2 42. 3 34. 4 38. 1 32. 8 36. 4 35. 4 37. 2 37. 6 38. 0 37. 6 38. 0 37. 6 34. 2 37. 6 34. 2 37. 6 34. 2 37. 6 34. 2 37. 6 34. 2 37. 6 34. 2 37. 6 34. 2 37. 6 37. 8 37. 6	+ 4.8 + 3.3 + 4.6 + 3.6 + 4.3 + 4.1 + 2.7 + 2.9 + 3.4 + 2.6 + 2.1 + 5.1 + 2.1 + 5.1 + 4.3 + 4.5 + 4.5 + 4.5 + 4.3 + 4.4 + 4.4 + 1.2 + 3.9 + 3.3 + 4.1 + 3.9 + 3.3 + 4.5 + 3.9 + 3.3 + 4.5 + 3.9 + 3.6 + 4.5 + 4.5	62 58 65 66 64 62 65 64 64 64 64 64 65 65 65 65 65 65	2†666666666666666666666666666666666666	18 0 18 10 124 11 7 7 2 12 12 12 12 13 6 9 14 12a 11 19 8 8 10 10 10 10 10 10 10 10 10 10 10 10 10	13 26 10† 13 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26	25 31 27 19 38 40 34 35 32 31 32 35 32 34 34 28 27 29 32 34 36 40 40 40 40 40 40 40 40 40 40 40 40 40	5.13 5.34 5.69 5.08 3.86 5.08 5.07 5.27 4.00 6.33 4.75 3.40 4.53 4.49 4.53 4.69 5.18 5.34 4.69 5.18 4.69 5.18 4.40 4.69 5.18 4.40 4.69 4.40 4.40 4.40 4.40 4.40 4.40 4.40 4.4	$\begin{array}{c} + 1.61 \\ + 1.63 \\ + 1.35 \\ + 1.59 \\ - 0.01 \\ + 1.17 \\ - 0.01 \\ + 0.85 \\ + 1.38 \\ + 0.47 \\ + 2.21 \\ + 1.77 \\ + 2.21 \\ + 1.77 \\ + 1.39 \\ + 1.69 \\ + 0.65 \\ - 0.31 \\ + 0.53 \\ - 0.17 \\ + 1.71 \\ + 0.79 \\ \end{array}$	1. 85 1. 30 1. 84 1. 52 1. 00 1. 89 0. 91 1. 15 1. 36 0. 95 1. 77 1. 63 1. 69 1. 47 1. 10 1. 60 1. 60	12.0 13.5 14.0 10.4 4.0 9.5 5.4 14.0 10.3 15.5 11.6 6.0 12.0 14.0 9.0 14.0 11.0 11.0 11.0 12.5 11.6 6.0 12.0 14.0 9.0 7.5 4.0 11.4 0 12.2 4.0 11.4 0 12.2 4.0 11.4 0 12.2 5.0	9 78 11 13 6 6 9 8 7 8 8 11 9 8 7 8 8 10 8 8 8 11 7 7 7 10 8 8 10 10 10 10 10 10 10 10 10 10 10 10 10	14 15 8 18 13 14 20 11 5 14 15 12 12 9 16 18 11 11 11 18 8 12 9 14 6 12 14 11 11 11 11 11 11 11 11 11 11 11 11	5 3 14 6 5 12 12 12 15 9 6 6 11 6 6 6 15 8 15 6 9 3 3 8 14 10 6 6 9 6	12 13 9 8 6 6 5 10 9 11 8 10 8 10 9 7 7 12 10 11 11 18 11 11 11 11 11 11 11 11 11 11	W. DW. SW. W. DW. W. W. W. W. W. SW.	Erskine R. Eadie. Samuel J. Hixson. Dr. Wm. H. Mitchell. Joseph White. Henry A. Jorden. D. S. B. McCoy. U. S. Weather Bureau. George S. Briggs. Wm. T. Farley. Brice E. Riker. William C. Harris. L. B. Bonnett. Hiram E. Deats. Charles F. Richardson. Orville Bassett. Frank V. Jemison. Charles J. Bates. Dr. John Y. Sinton. James Armstrong. Samuel K. Pearson, jr. Ralph Robertson. William R. Bowne. Warren C. Hursh. A. Sweetman. William D. Martin, jr. George L. Gillingham. Prof. William Wiener. Harry Holcombe. F. Vernon Losee. William L. Flick. Heber A. Probert. D. Wilson Smith. John Neagle. Lincoln Van Gilder. M. S. Taylor. A. A. Macdonald. Dr. Wm. J. Chandler. George Dymock. James L. Bennett. Frank R. Austin. Alfred Chalmers. Prof. R. D. Maltby.
ayardurlingtonranklin	Pendleton	875	17	35.0	+ 4.8 + 2.6	69	6	- 4 31	26 13	44	1.45	- 0.75 - 1.24	1.00	10.0	4	8	17	6	W.	Solomon Clark. J. W. Vandiver. Fred Calhoun.
ost City artinsburg oorefieldomney	Berkeley		5 21 15 16	35.1	+ 2.5 + 1.7	64 70 73	6 6	9 7 6	13 '6 26	31 32 38		+ 1.15 - 0.22	0.82	8.5 8.0 9.0	10 9 5	11 14 12	11 11 16	9 6 3	nw. nw.	B. D. Hinegardner. G. W. Van Metre, C. E. John C. Fisher. E. F. Staub.
pper Tract	Pendleton	1,230	14	37.54	+ 3.8	66a	6	7	13	41.	1.57	- 0.88	0.55	7.0	6	4	17	10	W.	J. M. Mallow.
Maryland. nnapolis. alaitimore. ambridge heltenham hessertown hewsville. lear Spring oleman. ollege Park umberland arlington venton aston. mmitsburg allston. rederick rostburg. reat Falls. reen Spring Furnace edysville ake Montebello aurel eonardtown onrovia. ocomoke City rincess Anne ockyille.	Baltimore. Dorchester. Prince Georges. Kent. Washington. do. Kent. Prince Georges. Allegany Harford. Caroline. Talbot. Frederick Harford, Frederick Allegany Montgomery Washington. do. Baltimore. Prince Georges. St. Marys Frederick. Worcester. Somerset.	445 115 25 230 80 530 650 80 170 623 300 450 275 1,929 200 450 100 630 37 171 421	40 42 14 12 27 15 15 15 14 22 20 17 21 23 38 20 17 21 21 20 8 3 18 22 20 19 19 19 19 19 19 19 19 19 19 19 19 19	40. 6 41. 8 39. 4 37. 7 36. 8 35. 0 39. 4 36. 8 36. 0 39. 9 40. 5 36. 9 36. 9 36. 9 36. 9 36. 4 36. 9 36. 4 36. 9 36. 4 36. 9 40. 5 36. 8 40. 5 36. 9 40. 5 40. 6 40. 6	+ 4.2 + 3.7 + 4.0 + 5.0 + 4.2 + 4.0 + 4.2 + 2.4 + 4.0 + 6.3 + 1.6 + 3.7 + 2.6 + 2.6 + 3.5 + 4.6	70 71 70 71 66 69 69 69 67 75 69 70 63 69 71 73 69 71 72 72	7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	200 200 199 100 166 3 144 166 7° 6 6 100 133 188 155 133 5 5 9 124 4 0 0 148 148 149 149 149 149 149 149 149 149 149 149	13 13 13 13 13 28 26 26 26 26 26 26 26 26 26 26 26 26 26	31 35 30 39 30 26 26 36	4.17 4.39 3.56 3.61 3.42 4.88 3.80 1.81 4.75 4.82 2.87 4.36 4.36 4.18 4.56 2.66 3.66	+ 0.79 + 1.09 + 0.49 - 0.11 + 0.10 + 0.80 - 0.31 + 0.43 + 0.82 - 0.64 + 0.29 + 1.03 + 1.03 + 1.74 + 1.26 + 0.67 + 0.42 + 1.49 - 0.80 - 0.80 - 0.80 - 0.80	1. 18 1. 25 0. 98 0. 90 0. 87 1. 50 1. 50 1. 50 1. 50 1. 50 1. 50 0. 95 2. 00 5. 1. 30 0. 85 0. 72 0. 97 1. 30 0. 80 0.	6.0 4.4 9 4.0 9.0 9.0 16.5 6.0 6.0 6.0 9.0 9.0 9.0 14.8 7.5 7.0 0.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	9 13 10 11 12 8 9 6 10 8 7 7 5 10 10 10 10 10 10 10 10 10 8 11 11 12 10 10 10 10 10 10 10 10 10 10 10 10 10	11 10 13 17 15 10 19 17* 12 11 18 18 14 4 15 5 5 18 18 18 18 11 19 19 19 18 18 18 11 19 19 19 19 19 19 19 19 19 19 19 19		5 9 7 6 15 11 10 7 10 7 10 12 7 12 12 16 11	SW, 6 W. SW. SW. SO. DO. N. W. N. SO. SO. SO. SO. SO. SO. SO. SO. SO. SO	U. S. Naval Academy. U. S. Weather Bureau. T. E. Keenan. George Hartnell. M. W. Thomas. D. Paul Oswald. W. W. Frantz. J. S. Harris. Prof. H. J. Patterson. F. E. Harrington. Prof. A. F. Galbreath. H. B. Mason. Henry Shreve. J. M. Sheridan. J. H. Curtiss. Chas. S. Birely. R. A. Walter. C. E. Sullivan. E. G. Kinsell. J. A. Miller. Martin L. Dobler. Dr. T. M. Baldwin. Brother Fidelis. J. H. Lawson. Hon. R. M. Stevenson. J. R. Stewart. Dr. G. E. Lewis.

Table 1.—Climatological data for December, 1912. District No. 1—Continued.

			years.	Temp	perature	e, in c	legre	es Fah	renh	eit.	Prec	eipitation	, in in	ches.	lays,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy 6.01 inch or mor	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.		Observers.
Maryland—Continued. Salisbury. Solomons. Sudlersville. Pakoma Park Towson. Van Bibber. Westernport. Vestminster. Voodstock.	Baltimore	23 20 65 320 465 100 1,000 860 392	7 21 13 14 4 15 18 19 38	38. 8 37. 3 36. 9 36. 4 38. 6 37. 8d	+ 4.2 + 3.3 + 4.1 + 2.8 + 7.0 + 6.4 + 5.6	72 69 67 71 70 69 70 69 ^d 69	6 6 6 6 6 6 6 7	15 22 8 14 11 7 10 12 ^d 13	13 13 25 13† 26 25† 26 13† 26	38 35 38	5. 25 4. 68 4. 23 4. 71 3. 08 4. 29	+ 0.37 + 1.18 + 0.46 + 0.63 + 0.79 - 0.12 + 0.61	0.90 0.76 1.22 1.05 1.35 1.68 0.90 1.30	4. 0 3. 5 9. 0 4. 0 7. 1 9. 5 10. 6 5. 0 5. 0	13 8 7 9 8	13 8 14 3 12 18	10 9 7 15 7 1 4d 2	10 13 12 12 12	sw. s. s. nw. nw.	W. E. Downing. Dr. W. H. Marsh. Henry L. Higman. L. M. Mooers. C. W. E. Treadwell. W. Benj, Ford. Prof. O. H. Bruce. Prof. Geo. F. Morelock. Rev. J. F. Dawson, S. J.
Delaware. belaware City over iliford ililsboro eaford ilmington District of Columbia.	Sussexdo	10 40 20 20 40 86	10 24 28 20 21 1	41.2 42.2	+ 4.7 + 3.6 + 5.4 + 4.3	66 69 69 74 70 67	6 6 2† 7 6 6	16 18 17 15 16 20	26 13 13 13 25 13†	24 31 32 38 32 25	3.87	+ 1.70 + 1.08 - 0.15 + 0.05 + 1.51	2. 25 1. 57 0. 96 0. 85 0. 71 1. 54	4.9 10.0 4.0 6.0 4.0 12.0	10 9. 10	15 12 16 16 14 22	10 9 8 4 9 5	6 10 7 11 8 4	nw. w. sw. se. s.	H. Morton Price. W. C. Josting. Chas. J. Holzmueller. Rev. L. W. Wells. E. B. Brown. A. J. Taylor.
Vashington Virginia,	Dist. of Columbia.	112	42	40.0	+ 3.9	73	6	19	13	31	4.12	+ 0.96	1.12	6.5	12	12	7	12	S.	U. S. Weather Bureau.
Culpeper. Dale Enterprise Sastville Tredericksburg Sincoln Stount Weather Quantico Staunton Varsaw Vinchester Voodstock	Rockingham Northampton Spottsylvania Loudoun do. Prince William Augusta Richmond	450 1,350 15 100 500 1,726 16 1,380 160 717 927	4 33 2 23 11 8 15 20 20 1 16	46. 4 41. 2 36. 5 36. 2 37. 6 39. 5 41. 6 39. 0	+ 4.3	67 71 75 73 70 66 70 68 68 70 72	6 6 6 6 6 6 6 6 6	7 3 21 12 5 9 10 13 14 10 6	25 26 13 13 26 9 13 13 13 26 25	35 43 34 37 31 26 31 29 30 31 37	2.88 3.17 3.80 3.52 2.91 3.05 3.73	- 0.27 + 0.45 + 0.43 + 0.48 + 0.03	1.85 1.45 0.90 0.77 1.12 .94 1.41 1.05 1.10	5.0 6.0 0.5 2.5 5.0 5.5 4.0 3.0 7.5 5.5	8 9 10 11 9 12 7 11 6 8 9	11 10 12 16 12 9 13 9 11 13 16	13 15 9 9 11 11 11 9 10 11 6	7 6 10 6 8 11 9 12 9 12 8	S. SW. SW. SW. NW. NW. NW. SW. W.	Col. H. C. Burrows. Rev. L. J. Heatwole. B. Robertson. S. G. Howison. Dr. Geo. Roberts. U. S. Weather Bureau. R., F. & P. R. R. Ernest Nothnagel. C. H. Constable. Robert L. Glaize. Mrs. A. G. Artz.

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 1, North Atlantic States.

C1-11	Wetershed											-61			Da	y 01	mon	ш.				-		-			_		-			_	al.
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 1	8 19	20	21	22	23	24	25	26	27	28	3 2	19 3	30	31	Total.
Maine.															*																		
shland	St. John		T.	T.	T.		. 10			. 02					т				10								.36	.1	11		30		1.
ar Harbor	Coast		. 85		T.	. 45									Т.		. 15 .		22 2.0	T.			. 20	. 10			60	.0		1	90		6.
mbridge	Kennebec		. 25	. 22			. 25							OF .					40 .5	m			T	15			. 90			1	.03		4.
ornish	Saco		. 60					T.	T.					I.						1.	****		1.	. 10			*	1.3	30				3.
anforth	Penobscot		* 14	. 64	02		12		01	09					.08		40		18 1. 4				. 11	. 20			. 89			1	. 09 .		5.
astport	Coast Kennebec	T	02	28	, 00	T.	. 00	T.	T.	T.		Т.	T				.01	Т	. 6	1.15	T.		. 02	T			. 29	.5	55				2.
ustisairfield	do	1.	. 58	. 20			. 31												6	2							1. 25				. 93 .		3.
armington	do		. 23		.01		. 31	T.		T.							.13							T.	****		. 86				. 56 .		2.
ardiner	do		. 08	. 23	. 02		. 30	T.				T.				on.	. 13 .	7	10 .5			. 05									. 45 .		2.
reenville	do		. 22		T.		. 17	T.	T.			Т.	Т.			T.						.00											2.
oulton	St. John		. 30					. 00)						. 20	.10)			. 40 .		1.
owe Brook	Penobscot	. 20	34		.08		.37	****	. 01										4 0				- 1	. 10			1.04	1		1	. 04 .		3.
adison	Androscog'n. Kennebec Penobscot Saco		.52		. 00		. 10	. 22											28 . 6	3				T.			.70	1	70		. 80	000	3.
lillinocket	Penobscot		. 30		T.	. 01	. 04		T.			.01	T.			T.	. 08 .		21 . 4	5				00				6	10		99	. 363	2.
orth Bridgton	Saco	. 12	. 36					. 36																. 90							. 00		de
quossoc	Androscog n.		****			****													9	1	1			****	****		. 60) .4	40		.10	.56	3.
rono	Penobscot						. 20												60 32 .5 3								. 40)			. 20		1.
atten	Coast			. 05			41	· m	m					T.					32 .5	8			T.	. 25			1.10	0		***		2:	4.
ortland	St. John		. 03	.12	4.	d.	T.		T.				T.	T.				. 20	3	3 T.			T.										2.
tumford Falls	St. John Androseog'n.		. 19		T.		977	7 10											UO . U	000		0000									. 64	T.	2.
he Forks	Kennebec															00			9				T.								.14	.58	2.
an Buren	St. John		T.	.18			. 18		.08		****	****			T.	T		*** *;	r	3 .2	5	****	Т.	.01		****			** **		.99		2.
Vinslow	Kennebec		. 43	****	****	*	. 28				****			****	****			***		****		****		.02			1						
New Hampshire.							0.00	T.					T				06		Г	2			T.	. 23			1. 1	5 .0	01		.70	T.	3.
Istead Center	Connecticut.		. 19	.33		****	.37	T.	T	06			T	.02			.02		r	3 .0	5	.08		.08			RJ RJ	5		-	. 59	****	3.
enton	do			.11				1.	1.	.00			*	. 02			.10		40 .3	6 .1	5		.05	. 05			. 4	5 .1	15		. 61		
Bethlehem	Merrimack.						.58						T.						40 .3	0				.30			. 6	5		***	. 93		
oncord	do						.38		T.			1 1	11. 1				1.	4	661 .5												.67		3.
Ourham	do						. 47											1.	80					99			. 9	6			. 86		
ranklin	do			. 14			. 57			T.									19 .6	4					****		. 8	0			. 84		
rafton	do						. 20		700				T.				.04										. 6	5					
lanover	Connecticut			.05			40		1.				. 00				.11							. 15			1.2	0					
Ceene	Merrimack.		. 24	40			46		Tr.										12 .	6				. 40							. 80		
vasnua vewton	do			. 10			. 50												.05 .9	0				. 21			1.0	4			. 88	****	3
lymouth	do			. 26			. 49			T.					T.		T.		T	6 T	000			. 15			6	4		***	1.07	L	0
Vermont.																											1	1					
Bloomfield	Connecticut		. 07	.31			. 23			. 05							. 10		T	0 .1	3		.04									. 05	
Cavendish	do		. 31	T.			. 18	T.					. 13	. 10					T	15 T			. 00	10	.0	1	1.0	12			65		-
helsea			. 40				. 23												. 08					1.13	1	1	. 4	190			I. UO		3
danchester	Hudson		. 66	.07			. 57	T.	CIR.	25			17		01		.01		17	8 .1	9 T	T.		. 35			1.0	16 .	18		1, 10	.09	6
Somerset			08	. 13			40	1.	1.	. 07			. 14		· UA		T.		T	8 . 6	4		.02	. 05	T.		3	6 .	.38 .		. 52	.06	2
St. Johnsbury Vernon							.37						. 01				.08		. 19 .								. 1.0	15			. 75		
Woodstock							. 16													55				. 19			7	2			. 73		3
Massachusetts.																			-														
mherst	Connecticut		.38			T.	. 62		T.					T.				. 02	. 22	34				. 19			1.3	37				.01	4
Ashland	Merrimack.																		1.	10				.56			6	53				****	. 4
Bakers Bridge	do			. 62			. 43												. 24	32				. 38	3		. 1.3	37			1.04	****	. 4
Rodford	do		. 19	. 22			- 40						02		03				24	98				.77	T.		. 1.3	38 .	. 03 .		1.10		
				20																				. 80)		19. 7				87		
Blue Hill	. Coast		.31	. 30			39						T.	T.	.01				.31 .	14							. 4. 4	01			* 05	. 05	
Blue Hill	Coastdo		. 31	.30		.43	.38	8					T.		1				.31 .	94 35				. 64		4	5 .8	83			1.05		2
Blue Hill Boston Chestnut Hill	Coastdo		.31			. 43	. 38		. 01				T. T.						.31 .	94 35				. 64	3		5 .8	83 32			1.05		10 4
Blue Hill Boston Chestnut Hill Clinton			. 31	25		. 43	.38		. 01				T. T.		T.				.31 . .90 . * .	94 35 85 86				. 64	3 T		5 .8 .1.3 .1.3	83 32 28 .	.01		1.05 1.04 1.05	T.	4 04
Blue Hill Boston Chestnut Hill linton Concord Fall River	Coastdo		. 31	25		. 43	.38		. 01				T. T.		T.				.31 . .90 . * . .29 . .35 1.	94 35 85 86 30				. 64 . 53 . 42 . 75	T.		5	83	.01		1. 05 1. 04 1. 05 1. 24 . 95	T.	4.4 000 4
Blue Hill	Coastdo.		. 31 . 46 . 50 . 79 . 20 . 58			. 48	.38	8	. 01	1			T. T. T.	т.	T.				.31 .90 .20 .35 1.	94 35 85 86 62				. 64 . 53 . 42 . 78 25	T.		5	83	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03	Т.	Des 200 Per de
Blue Hill. Soston Chestnut Hill. Clinton Concord Fall River Fitchburg Framingham	Coastdo		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62			. 48	.38	8	. 01	1			T. T. T.	т.	T.				.31 .90 .20 .35 1. .10 .	94 35 85 96 62 13				. 64 . 53 . 42 . 75 . 25 . 58	T.)2	5 . 1. 1. 1. 1. 1. 1. 1.	83 32 28 13 86 27	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03	T.	4 4 4 4 4 4
Bedford Blue Hill Boston Chestnut Hill Clinton Concord Fall River Fitchburg Framingham Haverhill Hingham	Coastdododododododo		31 46 50 79 20 58 52 62 T70	. 25		.43	. 38 . 48 . 58 . 60 . 55 . 41	8	.01				T. T. T. .01	т.	T.				.31 . .90 . * . .20 . .35 1. .10 . * 1. .12 .	94 35 85 96 62 13 84				. 64 . 53 . 42 . 75 . 25 . 55	3 T.)2	5 1. 1. 1. 1.	83 32 28 13 86 27	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58	T.	4 4 4 4 4 4
Blue Hill Boston Thestnut Hill Tinton Oncord Fall River Fitchburg Framingham Haverhill Hingham.	Coast		31 46 50 79 20 58 52 62 T70	. 25		.43	. 38 . 48 . 58 . 60 . 55 . 41	8	.01				T. T. T. .01	Т.	T.				.31 .90 . * .20 .35 1. .10 . * 1. .12 .	94 35 85 86 30 62 13 84				. 64 . 53 . 42 . 75 . 25 . 55	3 T.)2	5 1. 1. 1. 1.	83 32 28 13 86 27	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58	T.	4
Blue Hill Boston Chestnut Hill Linton Oncord Fall River Fitchburg Framingham Haverhill Hyannis Efferson	Coast do do Merrimack do Coast Merrimack do do Coast do Merrimack do Merrimack do		31 .46 .50 .79 .20 .58 .52 .62 T70	. 25		. 48	. 38 . 49 . 50 . 50 . 50 . 41 . 44	3	.01				T. T. .01	Т.	T.				.31 .90 .20 .35 .10 .12 .12	94 35 85 86 30 62 13 84 75					3 T. 5)2	5 .8 .1.3 .1.3 .1.1 .1.1 .1.1	83	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58	T.	4 4 4 4 4 4
Blue Hill Boston Chestnut Hill Linton Oncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis ‡ efferson Lake Cochituate	Coast do do Merrimack do Coast Merrimack do do Coast do do Coast do do do do do do do Merrimack do do		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 T 70 . 1. 21	.43		.45	. 38 . 48 . 58 . 66 . 55 . 4 . 4 . 4 . 4	8	.01				T. T. .01	Т.	T.				.31 .90 .20 .35 .10 .12 .12	94 35 85 86 30 62 13 84 75					7 .04)2	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58 1. 11 1. 02	T.	
Blue Hill Boston Bestnut Hill Binton Concord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Lefferson Lake Cochituate Lawrence	Coast		31 .46 .50 .79 .20 .58 .52 .62 T70	.43		.45	. 38 . 49 . 58 . 60 . 53 . 41 . 44 . 44 . 44	3	.01			т.	T. T01	T. T. T.	Т.				.31 .90 .20 .35 1. .10 .12 .* 1. .* 1.	94 · · · 35 · · · 85 · · · 86 · · · 30 · · · 62 · · · 113 · · · 84 · · · 66 · · · · · · · · · · · · · · ·					3 T. 5)2	5 . 8 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	83	.01		1. 05 1. 04 1. 05 1. 24 .95 1. 03 .74 1. 58 1. 11 1. 02 .95 1. 02	T.	
Slue Hill Soston Chestnut Hill Linton Oncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis ‡ Lefferson Lake Cochituate Lawrence Leominster	Coastdododododododo		31 .46 .50 .79 .20 .58 .52 .62 T70 1.21	.43		. 43	. 38 . 49 . 58 . 60 . 53 . 41 . 44 . 44 . 44 . 44 . 55	8	. 01 T. T.			T	T. T01 T02	т.	т.				.31 .90	94 35 86 86 62 13 84 66 75 14 06					3 T. 5)2	5	83	.01		1. 05 1. 04 1. 05 1. 24 .95 1. 03 .74 1. 58 1. 11 1. 02 .95 1. 02	T.	
Blue Hill Boston Bestnut Hill Binton Oncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Lefferson Lake Cochituate Leominster Lowell	Coastdododododododo		31 .46 .50 .79 .20 .58 .52 .62 T70 .1.21 .63 .59 .30	.43		. 43	. 38 . 49 . 58 . 60 . 53 . 41 . 44 . 44 . 44 . 55 . 56 . 66	5 5 6 7 7 7 7 7 7	. 01			Т.	T. T01 T02	т.	т.				.31 .90	94 35 86 86 62 13 84 66 75 14 06			. 3		7 .00 4	02	5 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 .	83 32 28 13 86 27 00 60 25 17 32 10 26	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58 1. 11 1. 02 . 95 1. 02 . 84 1. 41	T.	
Blue Hill Soston. Chestnut Hill Linton Concord Fall River Fitchburg Framingham Haverhill Hyannis Lyannis Lefferson Lake Cochituate Leominster Lowell Middleboro	Coastdododododododo		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 T 70 . 1. 21 . 63 . 36 . 59 . 30	.43	3	. 48	. 38 . 48 . 58 . 66 . 53 . 41 . 44 . 44 . 45 . 55 . 66	8	.01			T.	T. T01 T T T T	T. T.	T.				.31 .90 .20 .35 1.0 .10 .12 .12 .12 .13 .14 .15 .15 .16 .17 1. .18 .17 1. .18 .19 .19 .19 .19 .19 .19 .19 .19 .19 .19	94 94 95 962 962 966 975 964 97 10 97			3		7 .00 4)2	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83 32 28 13 86 27 00 60 25 17 32 10 26 26 24	.01		1. 05 1. 04 1. 05 1. 24 . 95 1. 03 . 74 1. 58 1. 11 1. 02 . 95 1. 02 . 84 1. 41 1. 56	T.	
Blue Hill Boston Bestnut Hill Binton Oncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis ‡ efferson Lake Cochituate Lawrence Leominster Lowell Middleboro Nantucket	Coastdododododododo		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 T 70 . 1. 21 . 63 . 39 . 30 . 30 . 30 . 31 . 32 . 34 . 35 . 35 . 35 . 35 . 35 . 35 . 35 . 35	2 . 43	3	. 48	. 38 . 48 . 58 . 60 . 53 . 41 . 44 . 44 . 55 . 55 . 60 . 51	8	T. T.			T.	T. T01 T T T T	T. T.	T.				.31 .90 .20 .35 1.0 .10 .12 .12 .1.12 .1.13 .1.18 .1.17 1531	94 35 86 80 62 13 84 66 75 14 06 07 10 10 10			3	. 64 . 53 . 42 . 75 . 28 . 55 . 27 . 64 . 60 . 25 3	3 T. 5 T. 6)2	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83 32 28 13 86 27 00 60 25 17 32 10 26 24 52	.01		1. 05 1. 04 1. 05 1. 24 . 96 1. 03 . 74 1. 58 1. 11 1. 02 . 98 1. 04 1. 56 1. 22	T.	
Slue Hill Soston Shestnut Hill Sinton Soncord Filchburg Framingham Haverhill Hingham Hyannis ‡ Jefferson Lawrence Leominster Lowell Middleboro Nantucket New Bedford Norfolk	Coast		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 T 70 . 1. 21 . 63 . 39 . 30 . 30 . 30 . 31 . 32 . 34 . 35 . 35 . 35 . 35 . 35 . 35 . 35 . 35	2 . 43	3	. 48	. 38 . 48 . 58 . 60 . 53 . 41 . 44 . 44 . 55 . 55 . 60 . 51	8	T. T.			т.	T. T	T. T.	T.		.01	т.	31 .90	94 35 85 86 30 62 113 84 66 75 114 006 15 007 15 007 328			3		3 T. 5 T. 6	02	5	883	.04		1. 05 1. 04 1. 05 1. 24 .95 1. 03 .74 1. 58 1. 11 1. 02 .95 1. 02 .84 1. 56 1. 22	T.	
Blue Hill Boston Phestnut Hill Inton Oncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Lefferson Lake Cochituate Lawrence Leominster Lowell Norfolk Plymouth	Coastdododododododo		. 311 . 466 . 500 . 799 . 200 . 588 . 522 . 71 . 700 . 1. 213 . 339 . 360 . 752 . 440 . 88	.43		. 43	. 49 . 55 . 66 . 53 . 44 . 44 . 44 . 55 . 66 . 11 . 9	8	. 01			T.	T. T	T.	т.		.01	т.	31 .90	94 35 85 86 86 86 84 84 84 84 84 84 84 84 85			3	. 64 . 53 . 42 . 75 . 26 . 55 . 27 . 64 . 60 . 21 . 3 	33 T	02	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	883	.01		1. 05 1. 04 1. 05 1. 24 .95 1. 03 .74 1. 58 1. 11 1. 02 .98 1. 02 .84 1. 15 66 1. 12	T.	
Blue Hill Boston Bestnut Hill Binton Doncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis † Fefferson Lake Cochituate Lawrence Leominster Lowell Middleboro Nantucket Norfolk Norfolk Plymouth Princeton	Coastdododododododo)	3	. 433	. 44 . 55 . 60 . 53 . 44 . 44 . 44 . 5 . 5 . 6 . 6 . 11 . 9	8	. 01			T.	T. T	T.	т.		.01	т.	31 .90	94 35 86 86 86 86 84 84 84 84 84 84 85				. 64 . 53 . 42 . 78 . 25 . 54 . 60 . 21 . 3 	3 T	02	5	883 332 288 13 886 277 000 25 117 126 224 224 32 32 32 40 .	.01		1. 05 1. 04 1. 05 1. 24 99 1. 03 . 74 1. 58 1. 11 1. 02 . 84 1. 15 6 1. 22 . 63 1. 12 . 63	T 199	2
Blue Hill Boston Chestnut Hill Clinton Concord Fall River Fitchburg Framingham Haverhill Hingham Hyannis ‡ efferson Lawrence Lawrence Leominster Lowell Middleboro Nantucket New Bedford Norfolk Plymouth Princeton	Coastdod		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 T 70 . 1. 21 . 63 . 39 . 30 . 73 . 74 . 44 	3 2 05 3 3 3 3 3 3 5 5 5 6 6 8 5 5 6 6 6 6 6 6 6 6 6 6 6 6	3	. 433	. 44 . 55 . 60 . 53 . 44 . 44 . 44 . 5 . 5 . 6 . 11 . 9	8	. 03			T	T. T	T. T. T.	т.		.01	т.	.31 .90	94 35 85 85 86 96 97 113 84 86 97 9				. 64 . 53 . 42 . 78 . 28 . 55 . 52 . 64 	3 T	20	5	883	.01		1. 05 1. 04 1. 05 1. 24 . 90 1. 03 . 74 1. 58 1. 11 1. 02 . 98 1. 41 1. 56 1. 22 . 66 1. 11 . 44	T	2
Blue Hill Boston Bestnut Hill Binton Concord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Hefferson Lake Cochituate Lewrence Leominster Lowell Middleboro Nantucket New Bedford Norfolk Princeton Provincetown Rockport	Coastdododododododo			3	3	. 43	. 46 . 55 . 60 . 54 . 44 . 44 . 5 . 5 . 6 . 5 . 6 . 5 . 5 . 6	8	.01			T	T. T	T. T. T.	Т.		.01	т.	.31 .90 . * .20 .35 1. 10 . * .11 . 12 . * .118 * .153 119 1. * .15 .20 143	94 335 355 366 375			.36	. 64 . 53 . 42 . 75 . 26 . 27 . 64 . 60 . 24 . 80 . 81 . 81 . 81 . 81 . 81 . 81 . 81 . 81	3 T	20	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83	.01 .04 .04	.08	1. 05 1. 04 1. 05 1. 24 1. 03 1. 03 1. 03 1. 03 1. 03 1. 03 1. 02 98 1. 04 1. 05 1. 03 1. 03 1. 03 1. 03 1. 03 1. 03 1. 03 1. 04 1. 05 1.	T 199	20
Slue Hill Soston Shestnut Hill Sinton Soncord Fall River Fitchburg Framingham Haverhill Hingham Hyannis ‡ Jefferson Lake Cochituate Lawrence Leominster Lowell Middleboro Nantucket New Bedford Norfolk Plymouth Princeton Provincetown Rockport Rutland	Coast		. 31 46 50 79 20 58 52 62 T)	6	.43	. 38 . 49 . 55 . 60 . 55 . 44 . 44 . 44 . 5 . 5 . 6 . 1 . 9	8	.01			T	T. T	T. T. T.	Т.		.01	т.	31 .90 .* 20 .35 110 .* 112 * 1* 117 153 119 1* 14 153 119 14 1	94 335 355 366 362 362 362 364 366 375 375 375 385 371 385 385 371 385			. 3	. 64 . 53 . 42 . 75 . 26 . 27 . 64 	3 T	202	5 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	83	.0104	.08	1. 05 1. 04 1. 05 1. 24 1. 03 1. 03 1. 03 1. 03 1. 02 98 1. 02 98 1. 02 1. 02 1. 03 1. 04 1. 04	T 199	220
Blue Hill Boston	Coast. do. do. do. do. Coast. do. do. Coast. do. do. Coast. do. do. do. do. do. do. do. do. do. do		311 466 500 500 500 500 500 500 500 500 500 5)	55	.43	. 38 . 48 . 55 . 66 . 53 . 44 . 44 . 44 . 5 . 5 . 6 . 6 . 1 . 5 . 6 . 6 . 5 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	.001			T00	T. T	T.	T	. 01	.01	T	.31 .90	94 35 355 366 366 366 366 366 366 366 366 366 366 366 366 366 371 388 366 388 371 388 366 388 371 388 366 375			.00	. 64 . 53 . 42 . 77 . 55 . 27 . 64 . 60 . 21 . 81 . 81 . 81 . 81 . 81 . 81 . 81 . 8	8 T	22	5	83	.01 .04	.08	1. 05 1. 04 1. 05 1. 24 1. 03 74 1. 58 1. 11 1. 02 98 1. 41 1. 56 1. 26 1. 26	T 199	200
Blue Hill Boston Bestnut Hill Binton Concord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Hefferson Lake Cochituate Lewrence Leominster Lowell Middleboro Nantucket New Bedford Norfolk Princeton Provincetown Rockport	Coastdod		311 466 500 588 522 71 70 1 221 688 88 88 88 52 52 55 55 55 55 55 55 55 55 55 55 55) 25 3 2 05 2 43 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	33	.43	. 38 . 48 . 56 . 53 . 44 . 44 . 44 . 5 . 5 . 6 . 6 . 1 . 9 . 5 . 6 . 6 . 6 . 5 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6	8	. 001			.000	T. T01 T02 T02 T. T. T02	T.	Т.	. 01	.01	T	.31 .9090	94 35 35 36 36 37				. 64 . 53 . 42 . 75 . 26 . 55 . 27 . 64 . 60 . 21 . 88 . 1.02 . 77 . 44 . 66 . 2 . 21 . 66	3 T	20	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83	.01	.08	1. 05 1. 04 1. 05 1. 24 1. 05 1. 03 74 1. 58 1. 11 1. 02 98 1. 01 1. 56 1. 2i 66 1. 11 4 60 51. 00 1. 22 98 8	T	2 0
Blue Hill Soston. Chestnut Hill Clinton Concord Fall River Fitchburg Framingham Haverhill Hingham Hyannis Hefferson Lake Cochituate Leominster Lowell Middleboro Nantucket New Bedford Norfolk Plymouth Primeton Provinceton Routinad Somerset Spot Pond Springfield Sterling	Coastdododododododo		.311.466.500.650.650.650.650.650.650.650.650.6)	33	.44	. 38 . 49 . 55 . 56 . 55 . 44 . 49 . 45 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	.01				T. T	T.	Т.	. 01	.01	T	.31 .9090	94 35 35 36 36 37				. 64 . 53 . 42 . 75 . 26 . 55 . 27 . 64 . 60 . 21 . 88 . 1.02 . 77 . 44 . 66 . 2 . 21 . 66	3 T	20	5	83	.01 .04	.08	1. 05 1. 04 1. 05 1. 24 1. 03 74 1. 58 1. 11 1. 02 98 1. 41 1. 56 1. 26 1. 26	T	200
Blue Hill Soston. Chestnut Hill Linton. Concord. Call River Fitchburg. Framingham Laverhill. Hingham Lyannis ‡ efferson. Lake Cochituate. Lawrence. Leominster Lowell. Middleboro Nantucket. New Bedford Norfolk. Plymouth Princeton. Provincetom. Provincetom. Provincetom. Rockport Rutland Somerset Spot Pond. Spot Pond. Spot Pond. Springfield Sterling	Coast		.311.466.500.650.650.650.650.650.650.650.650.6)	33	.44	. 38 . 49 . 55 . 56 . 55 . 44 . 49 . 45 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 5 . 5 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	.01				T	T. T. T.	T	. 01	.01	T	31 . 90	94			.33	. 64 . 53 . 42 . 78 . 28 . 55 . 27 . 64 . 60 . 21 . 33 	3 T.	20	5	83	.01 .04	.08	1. 05 1. 04 1. 05 1. 24 1. 05 1. 03 1. 03 1. 03 1. 11 1. 02 1. 08 1. 01 1. 56 1. 22 1. 12 44 1. 56 1. 00 1. 2. 98 1. 66	T	200
Blue Hill Soston. Chestnut Hill Sinton. Sir America Lawrence Leominster Leomi	Coastdododododododo		. 31 . 46 . 50 . 79 . 20 . 58 . 52 . 62 . 77 . 70 . 1. 27 . 63 . 36 . 36 . 37 . 72 . 44 . 88 . 88 	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	.44	38 49 49 55 60 55 44 44 55 55 55 55 55 55 55 55 55 55	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	. 01			.000	T. T	T. T. T.	T	.01	.01	T	31 . 90	94			. 33	. 64 . 53 . 42 . 75 . 25 . 27 . 64 . 22 . 33 	3 T.	20	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	83 32 86 86 27 00 60 25 17 32 10 26 26 26 24 52 40 79 41 58 83 35 40 40 40 40 40 40 40 40 40 40	.01 .04	.08	1. 05 1. 04 1. 05 1. 04 1. 05 1. 04 1. 24 1. 24 1. 58 1. 11 1. 02 1. 03 1. 12 1. 58 1. 12 1. 15 1. 16 1. 16 1. 16 1. 17 1. 18	T	20
Slue Hill Soston. Schestnut Hill Iinton. Soncord. Sall River Sitchburg. Fitchburg. Framingham Laverhill. Hingham. Lyannis ‡ efferson. Lake Cochituate. Lawrence. Leominster Lowell. Middleboro Nantucket. New Bedford Norfolk. Plymouth Princeton. Provincetown. Rockport. Rutland. Somerset Spot Pond. S	Coast. do. do. do. Merrimack. do. Coast. Merrimack. do. Coast. do. do. Coast. do. do. do. do. do. do. do. do. do. do		.31.46 .500 .588 .52.62 .7.70 .633 .333 .772 .440 .888 .81.22 .75.55 .99	3 3 43 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	.44	38 .44 .44 .44 .55 .66 .11 .55 .67 .09 .55 .55 .55 .77 .04 .55 .77 .44 .55 .77 .45 .55 .55 .55 .55 .55 .55 .55 .55 .55	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	. 01				T. T	T. T. T. T. T. T. T. T.	T	.01	.01	T	31	944 355 866 866 6131 884 666 607 775 114 004 007 110 004 007 110 005 004 007 110 005 007 110 006 007 110 007 110 007 110 008 009 110 0			. 33	. 64 . 53 . 42 . 77 . 25 . 27 . 64 . 40 . 22 . 22 . 33 	3 T.	20	55	83 32 86 27 200 600 225 110 226 224 32 40 79 411 83 40 79 411 83 40 60 79 411 60 60 60 60 60 60 60 60 60 60	.01 .04	.08	1. 05 1. 04 1. 05 1. 04 1. 05 1. 03 1. 03 1. 03 1. 03 1. 11 1. 02 98 1. 02 84 1. 15 65 1. 06 1. 22 99 1. 06 1. 2 99 1. 06 1. 06 1. 06 1. 06 1. 06 1. 06 1. 06	T	200

Table 2.—Daily precipitation for December, 1912. District No. 1—Continued.

Stations.	Watershed.											1			-	1		onth		1	-	-	-		-	-	-	1	1	1			al.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Rhode Island.																																	
Block Island	Coast		.60				.36												. 48	1.06					. 59			1.03			1.54		5.
	do			. 66			.64									****			*	1.55					.70			$1.11 \\ 1.29$			1.48 1.61		6.
reene						****							T.	T.					1.05	1.31	****				.18			1.47			1.68		6.
Cingston	do		.80				.58					T.							.58	1.15					1.00			1.17			1.59		6.
arragansett Pier	do		.20	.44		T	.33		T.			T.	T.	T.					. 55	1.55					.90			1.40 1.42			1.43		6.
rovidence	do		.74			T.	. 60		T.				T.	T.				. 03	.36	1.03					.70			1.42 1.03	T.		1.12		5.
Vallum Lake	do		.98		****	****	. 60	- + + +	Т.		****	****		****				****	. 88	****	×+++	****			, 65			1,45	. 10		2.00		6.
Connecticut.									1															- 1									
ridgeport	Connecticut.		.24	.10		T.	. 69			T.		T.	+ * * *		****		T.	T.	.30 T.	.83					.65			.97			1.61		5.
olchester	Coast		.70				.57						.05		****			****	* .27	1.13					1.00			1.07					6.
ream Hill	Housatonic .		. 75			T.	. 47		. 0			***	.08						. 27	. 31											1.58		4.
Panielson	Coast Housatonic.		81			. 66	54		00			****	10	****			.01		.05	1.20		T		****	1.25			1.32			. 99		6.
Iartford	Connecticut.		. 43			T.	.61		T.			T.	T.					T.	.12	. 63		T.			.42			1.14	T.		1.11		4.
lawleyville	Housatonic . Coast		. 05	.30			, 55										1		.17	. 74			***-		****	70		1.30			1.10	1.65	
ake Konomoc	do.		44	. 10	****	T	. 66		T	****		T.	T.	****		****		T.	.28	. 81		T.			1.25	.10		1.08			1.52	1.00	
ew London	do		35				. 53												, 55	1.15	****			****	. 90			1.07					5
orth Grosvenor	do		. 84		***	****	. 60						.07	***					. 22	. 83	****	****	****		.37			1.34			1.25		5
Dale. Jorwalk	do		. 30				.55												*	1.04					. 63			. 95			1,69		5
outhington	do		. 20	.50		****	. 60						.05						. 20	. 60					. 70			1.10	T.		1.05	.10	5
outh manchester	Connecticut.	4			2555	***	.37						T.	****		****				. 42					. 00			1.35			1.40		4
orrington	Coast Housatonic.	****	. 60	****	****	****	.59	****		****	****		.04						.01	. 62		.02	****		. 45			. 69	.40		.10	.94	4
oluntown	Coast		-	.58		****	.75					T.								1 60					1.60				1.20		1.50		6
Vallingford	do		.52			. 60					***	T.	01	***	****	****			.80	. 05		***		.38			. 55	.58 1.18	m.			.01	
Vaterbury Vest Simsbury	Housatonic . Connecticut.						.53		T.				T.		****					.66		****		****	.50			1.16					
New York.																																	
ddison	Susque'na		. 13	. 04			. 42	T.		Т.			T.				. 01		T.	. 20	T.	T.			. 16			. 19	. 03		. 14		1
lbany	Hudson		.08	. 34		****	. 26		. 01			3			****		. 08		. 12	. 39	T.	T.	T.	T.									2
lfredmsterdam	Susque'na Mohawk		47	. 34	.01	.30	. 34				. 0.		. 03				. 13			. 10		. 08	. 08		. 20			.50			. 67		2
thens	Hudson		. 35			. 00	.32			Т.			T.	****	. 02 T.		1.14			.80		****			. 14								3
ainbridge	Susque'na		T.	. 33	***	***	. 34		. 03	3 . 0	T.		. 05		. 02	T.	. 02		0.4	. 72	. 03	. 14	.01		. 11	. 08			. 40		. 03		2
Ballston Lake	Hudson Coast		. 21	. 30		****	. 43	.01	T.	T.			T.	***	T.		. 00		T.	. 56	T.		T.	Т.	. 22			. 62			1. 16		2
Beerston	Delaware		. 52				. 39	. 02	2			. 01					. 00		. 05	. 81	. 04				. 20		. 57						. 3
Binghamton	Susque'na					. 05	. 17	T.	T.	T.		01	. 01	T.		T.	T.	T.	. 15	. 46	T.	T.	T.		. 15				T.		. 16		1
Bouckville	Hudson						67			10		* * * * *	. 05	T.			. 00		.09	. 49	. 30	. 10	****		. 10			1.09			. 34		4
hatham	do			. 12			. 25			T.					T.		. 12		.04	. 70	T.		T.		. 25			. 85	. 05		. 42		. 3
ooperstown	Susque'na								07	7							. 04		. 70	. 15								. 60			. 53		. 3
Corinth []	Hudson Susque'na			1. 05			. 32	00	2				m'	****	***		16		. 03	.48	. 04	. 06	****		20		***	. 21	ï.ii		. 92		3 2
Cutchogue	Coast		. 54	. 20		. 01	. 40					1000							. 58	. 97		.00			1.50			1 09			1. 91		7
De Ruyter	Susque'na						. 33	T.	T.	T.		T. T.		T.			. 13		. 09	. 65	. 04	T.			. 17	T.		. 36					
Elmira	Hudson			10		. 28		T.	. T.			Т.	T. T. T.			. 0.	06		T.	. 36	T. T. . 12	Т.	Ť.	****	15			. 27			. 15		. 1
Hoversville	Mohawk		. 60	T.				T.	T.	T.			T.	. 0			T.		. 42	. 60	.12		T.		. 18			. 40	. 06		. 74	T.	3
Greene	Susque'na		****				. 55								***																		
Freenfield Center	Hudson	2	. 35				. 59						03			***			.09	. 90	****	****	****	****	14			84			- 60	. 90	3
Griffin Corners	Delaware								1000	1																							
Hancock	Susque'na			.21			. 36						. 04				. 0		.05	. 70	.08		. 04		30			. 58				. 35	5 2
Haskinville Hoosick Falls [[Susque'na Hudson		. 13	20			. 30		. T.				T.	. 18			. 12		. 05	. 06	. 08	m		****	.07	30	T.	. 25	. 33		56		. 1
ndian Lake	do	1		1									****	1.		1	. 02	*****	. 02	. 40	. 30	1.			1.	. 00	1				. 00		
effersonville	Delaware		. 62			T.	. 76	T.					T.	T.			00	3	. 16	. 86	T.	T.		T.	. 25			. 72	T.		. 57		. 4
Liberty	OD	****	15	***	****	****	31	0.	7 7	T				T		***	00		. 10	00	06	****		.03	07			26	. 07			3	
dechanicsville	Hudson		. 40			. 43		. 01	1		***			1.	***	***	03		. 20	. 40	. 10			T.	. 03	. 70	. 35	T.	. 01	.01	1 . 35		2
Mechanicsville Mohonk Lake Morehouseville Mount Hope	do		.80			****	. 76									. 07				.68	. 50		***					1.08			. 7	1	. 4
Morehouseville	Mohawk		1. 55	.10		5.4	. 45	.03	3 .13	5 .0.		. 20	. 15	- 18			. 10		99	1.12	. 15			****	1 60	.15	.17	-27	. 22		1.00		. 6
Mount McGregor	Hudson		. 44			.02												1		.00		****			1.00						1		
Newark Valley	Susq'hanna.		.14				. 40	. 02	2				T.				T.			. 66	. 09				.18			. 33			2	.18	- 2
Nount McGregor Newark Valley New Berlin New Lisbon New York City	do		20	.25		****	.39	****	T.	T.	***	m		m			. 0.		.02	.80		T.	T.	****	. 15			T.	. 62		T.	. 15	5 2
ew York City	Coast		.08		****	.03	. 40					I.	T	1.			. 0	. 01	.17	. 45	.04			****	1.14			79				7	
TOTAL CLOUB	AAGAGGII																														70)	. 1
orthville	do		1.22				. 28							783						. 85					. 16			.30			89	9	. 5
Norwich	do do		.07	.41	****	****	34		00	T.				T.			. 0	.01	.04	.70	.09	.07	T.	****	. 10	.13		1.15				3	
xford	do		1 . 35	T.			. 42			. 0.	5	1	T	- 06	3		. 03	5	0.02	.88	. 20	.46			. 25	T.			. 03	5	45	0.00	2 3
yster Bay	Coast						. 22					T.							. 20	1.20					. 23			.90			. 1. 5	3	. 4
Port Jervís	Coast		.83	90		.02	. 44	T.	.03	5		T.		***	***	**	. 0.	T.	. 07	. 62		****	T.	****	1 36			1.01			60		- 4
alisbury	Mohawk		.74	T.			.37	,11	1 .00	8			.00	.04	1	***	3		. 23	. 95	****		-***		. 06	****		. 21	. 15		. 6	0 .03	3 5
carsdale	Coast		. 40)		T.	. 48											T.	.10	. 83					2.00			.75			. 1.70)	. (
etanket	do		- 40)		T	34			1										. 10			****	***	.00			.00	T.		. 1.5	5	. 4
herburneouthamptonouth Edmestonpier Fallsrenton Falls	Coast		Tr.	69		Tr.	90					· m	m	****			795		1	1 10	****	****			1 53							3 39	
outh Edmeston.	Susq'hanna		.30	. 03		1.	.27	T	T			T	1.	T			.00		- 44	. 84	.03	.04		****	. 19			. 25	.15		1.0	5	2
pier Falls	Hudson		-73			. 39							T.			. 04	4		. 91	.10				T.	.30			. 31		T.	. 93	3	1 3
renton Falls	Mohawk		- 43			.27	.07		. 03	5		. 04	. 12				25		T.										16	1 1	04	3	1 5
ribes Hill roy Vading River	Hudeon	****	. 80	00		****	15	****		* * * * *	***		1							1.20			****		.20		0	. 40	200		50	B 00	7 3
THE RESERVANCE OF STREET	MATAMOURES	***	****	.00	****	****	1 10										, Ui		. 02	. 40	. 00			I week	10		· · Uk	00	4 634		1	. 04	41

Table 2.—Daily precipitation for December, 1912. District No. 1—Continued.

Stations.	Watershed.						-	-	,	-	-					ay o	f mo	uen.															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ew York-Contd.																			-					•						-			
appingers Falls	Hudson						. 52										. 05	T.	T.	. 62	T.				. 60			1.42	. 20		. 48		4
arwick	do						. 30										. 05		. 05	. 45					. 54			1.10			. 60		3
	Susq'hanna. Mohawk		.11				.32		.01							. 02		T.		. 55	T. T.	T. T.	T. T.	T.	. 26			. 37					
est Point	Hudson		. 93				. 41											.64	.54	.00		1.	1.		.71			. 44			1.33		1
indham	Mohawk			. 19		т.		T.									. 09		.08	. 36		T.			. 20				. 18				
Pennsylvania.																																	
lentown	Lehigh					. 60					т.							. 01	.83					.30	. 03			. 64		. 48	. 70		
	Susq'hanna .		T.	. 36			.42	T.	T.	T.							T.		T.	.37		T.			. 22	T.						. 33	
ustin	do		.83				. 66						. 03				. 10	. 37		.17	. 15				. 13			. 09					
	Lehigh Susq'hanna.		56			.12	36						·m·					Т.	.02	. 72					70			. 60			1.30		1
owers Lock	Schuylkill	T.	.39				. 00		. 25			T.						. 85				1			.70		****	.90			1.72		
tawissa	Susq'hanna.		. 63			. 21	. 25											T.	. 20	. 75 T. . 23					. 37		.07	. 50			. 45		
	do		. 25			. 02	. 50						. 01						T.	T.		.02	· · · · ·		.17								
earfield	Coast		. 31		.04	.08	15		. 02			03	1.				. 04	.03	. 15	. 55	• • • •	T.	T.		1.03			86			1.56		
	Schuylkill		.40				. 10												. 30						1.11			1.82			100		
rifton	Susq'hanna.		1.05			. 10	. 40										. 05			1.10		.04			. 70			. 60			1.15		
	do		. 10	Т.	.06	T. 02	. 75		• • • •							. 01	.04	. 02	. 19	T.	Т.	T.			. 68								
phrataverett	Juniata		. 06		.00	. 52													T.					. 60	. 08						. 78		
orks of Neshaminy	Delaware		. 45					.40												. 65					. 75			1.09			1.80		
eorge School	do		. 10	. 16	.01	. 03	. 42					. 03						.02							1.05			. 26			1.78		
ettysburgirardville	Potomac Susq'hanna.		1 30		. 09		.37						·					1.	. 70						. 80			. 55			1.20		
ordon.	do		1. 25			.02														. 95					1. 20			. 72					
amburg	Schuylkill		. 27																. 27	.86					.80			. 61					
anover	Susq'hanna.		. 30		.11		. 24												. 15												. 12		
arrisburg	Juniata		.41		T.	. 41	. 11		T.				T.					T.	. 14									. 36)	-
vndman	Potomac	. 56				.32	. 30							****				****	. 03	T.					.80			. 22			59		
ancaster	Susq'hanna.		.17			1.20												. 10		. 75					1.11						1. 28	3	-
ansdale	Schuylkill		. 23				. 23												. 34									1.08			1.48		-
awrenceville	Susq'hanna.		. 50		.02		. 25	T.		02			T.						1.06	T.					. 30			. 70		1.12			
e Rov	do		.28		.02	.02	. 25			T.	****		.03			****	.01		. 01						. 25			. 20					-
ewisburg	do		. 49	. 02		. 15	. 41												. 04	. 59					. 31			. 40)		43	3	
loyd	do		. 51	T.	. 10				T.	. 01		T.	. 01				. 01		. 01						. 30								
ock Haven	Potomac				.08	.03	. 55											T		. 53					. 32			. 20				7	
auch Chunk	Lehigh		. 90	. 15	.00	. 21													. 11						1. 20			.84			90	9	
ifflintown	Juniata		. 63			. 02	. 48												. 01	. 50					. 70			. 46				3	
ilford	Delaware		. 58	. 29			. 66		70	. 02			T.						. 05			T.	T.		. 45			. 97		5		2	-
ontrose ountain House	Susq'hanna . Juniata		- 50			. 28	. 30		Т.				T.				T.				T.	T.			70			.35			3		-
ount Gretna	Susq'hanna .		.34		. 05	. 10	. 42					T.						. 01	. 09	.98					. 95			. 66			1.1		
ew Germantown	do	. 35	. 17									T.							.58						. 20			. 33			4		
ttsvillehiladelphia	Delaware		.35			.23	.21			. 04	.01	.30							.09						. 41			. 92			1.4		-
ocono Lake	do		2.30		.01		1.52				.01	T.				****	****	.03	T.					.03	- 02		18		60	0	1.7		
oint Pleasant	do		. 47				. 23												. 12	. 88					.50	5		. 97	7		. 1.8	4	
ottsville	Schuylkill		. 90			. 08					T.							.01	. 27	.83					.74	1		. 68			8		-
enova II	Susq'hanna		16	3	. 03	. 22	. 18	70			T.						.05	T.	. 40 T.	.51	T.				.00	T.	. 14				1.4		36
cranton	do		.82	2		.11	.41	T.	. 01				.01						.22	.60	T.	T.		T.	.56	3		.84	4 T.			9	
eisholtsville	Schuylkill		. 58	3			. 52													. 97					. 69			. 92			. 1.5	3	
elinsgrovehawmont	Susq'hanna Schuylkill			. 02		.07												. 02	.85						- 46			. 45			1 4	8	-
hippensburg	Susq'hanna		. 20	. 40)	. 17													.20	.71					85	3		.10			1.6		53
miths Corners	Schuylkill.,		. 52	2			.27													. 98					. 36	3		1.0	7		1.8		
	do			1	. 04	. 03	. 32	(T)	773	· · · ·						(T)	CD.		. 10	. 60		1 .02			. 78	3		.8			. 1.6		
tate Collegetroudsburg	Susq'hanna Delaware	. 4	80	11		. 04	. 02	T.	T.	T.			.01	1		T.	01	T.	03	85	.0	1 .02			. 21	3		0.10	8			3 0	
owanda	Susq'hanna					T.	. 20	T.	T.				T.				. 03		. 02	.70	T.	T.	1		2	5		.2	4			6	
Veikert	do		. 48	5		. 12		.40											. 50	. 49					. 2	7		. 2	5		3	7	
VellsboroVest Chester	Coast		.5	1	.03	. 08	. 42			T.							. 03	01	10	. 49	T.				. 25			1.1	8		- 3	4	E =
Vilkes-Barre II	Susq'hanna		. 30	. 72								. 03	T. T.					.01	T	. 75	T				2	3 0	4	1.0	2 .3	0	0	8 .5	52
Vilkes-Barre Villiamsport	do		. 43	3		. 56							T.							. 61					.2	7 .1	1	. 10	6 T.		0	3 .3	32
New Jersey.		1															1								-	1			1		1		
tlantic City	Coast		10	9	01	.27	06					. 13							. 57	2 30					5 .8			-	-9		-	6 T	p
	do		1 14	1 .10	0 . 01	.03	. 46				1	. 13	T					****	.15	. 46	3		***	1 .1					4	* ***	1.8		
elvidere	Delaware		. 11. 00	6			. 53	3									03		T.	. 73	3				. 1.1	0		. 1.0	3		. 1.3	0	
ergen Point	Coast		08	8		08	.40)			1	1							. 20	. 43	3				. 1.4	0	01	9	1		. 1.8	4	
oonton	Coast			9	T	00	.47					03				Т.			. 04	. 70	T.				1	2 .9	01	.4	8 .4	10	3	21.2	20
urlington	Passaic Coast Delaware		3	7	. 07	.20	T.				0	1 . 22						.00	. 38	00	3			9	5 . 0			9	0		1.0	10	
pe May City	Coast																			2	2			1	0 .5	5	Т.	.5	4		6	0 .1	10
harlotteburg	Passaic		. 6	3		. 55			T.			. T.							. 83	31					1.1	5		1.0	13		1.0	15	
layton	Coast		T.	.40	Т.	. 10	. 62			FF		. 08	m					****	- 18	. 40)				. 1.0	0		9	0		. 1.3	6	
ulvers Lake																				. 60	3		. 1	000	1.5	U		1.0	D T.		1 0	0	
lizabeth			2	6		. 03	.45	5			T								.13	3 .3	8				. 1.4	6		. 1.1	0		. 1.7	7	
lemington	do		5	7	. T.	.03	.24	i											.11	1 . 6	1				. 1.0	0		8	88		1.6	3	
laddonfield	Delaware		2	8	03	.09	.36					. 03							.13	3 .43	2				. 1.0	4		. 1.1	7 .1	0	1.6	9	
Iammonton			2	1	. Т.	.11	.32					. 12						10	.18	. 4					. 1.2	0		8	4		1.4	0	• •
lightstown			. 3	7		T.	.30		T		***	T	***					. 16	.01	5					4	3		10	5		1 4	7	
mlaystown	Delaware		3	7	07	.38					. 0	6						. 20)	3	2				. 1.1	0					9	00	
ndian Mills	Coast		. T.	.1	5 T.	.08	. 65	5				0							. 16	6 .3	9				. 1.6	2		. 1.1	0		1.6	0	
ersey City	do		. 13	2		.01	. 44		T.				T.					T.	.17	.4	8				. 1.1	2		5	9		1.6	10	* *
akewood	Delagrana																								. 1.0	0		1	A		1 6	01	* *
ambertvilleittle Fallsong Branch																	-							- 1		131		- 84	10				**

Table 2.—Daily precipitation for December, 1912. District No. 1—Continued.

Stations.	Watershed.															Day	of m	onth.															
otations.	Watershou.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Tew Jersey—Contd.																																	
oorestown	Delaware				2 .03			3				. 02							.13	.36				****	1.03			1.16			1.57		
ewarkew Brunswick	Passaic		30		T.		3	1	***			di.	****	****	****	****	****	****	16	40				****	1. 40			1. 30	T.	****	1.70		-
ewton	Delaware		. 95	5			.4	1							****	****	.01	****	. 10	. 67					.80			1. 12			.96		-1.
orthfield	Coast		. 05	. 10) T.	.30	1.1	4				. 13							. 61	. 39					. 82			.59		1	. 95		
aterson	Passaic			2		T.	. 30	6	T.	***	T.								. 11	. 52					. 77			1.00			1.32		
hillipsburg	Delaware		- 61		T.	. 07												T. T.	.07	. 65				****	. 66		. 05	. 89		1	1.26		
ainfieldeasantville	Coastdo				1.							16	I.			****		L	.11	41		****			1. 42						1.62		-
mpton Plains [[Passaic		. 44	. 87							****	. 03	****						. 04	.58				****	. 64	. 11		47	.50			1. 25	5
merville	Coast		.27		T.		.5												T.	.54													
ith Orange	do		. 38		T.	T.												T.	. 26	.21								1.20					
X90X	Hudson		- 73		700	m	. 36		***				****	****					. 04									1. 16		****			- 1
enton	Delaware Coast			.22		T.						.01				****	****		. 13						. 32						1.70		
ekerton	do		00	16	.02	29	- 4					16					****	****				1	****					80			1. 37		1
remud			. 02	* 40	.02	1.20	. 0		****	****	****	. 10		****			****		. 10	. 41		****			. 00		****	.00	****		1.01		1
West Virginia.																																	1
vard	Potomac		. 20		. 06	. 56	. 30)		. 10							T.	T.	T.	. 25					. 65			.50	. 10		.78	T.	4
rlington	do		. 10			. 15														T.					1.00			.20					
rpers Ferry	do					. 83	.20								***													. 42				. 10	
t City					. 11	1 10	- 12	****	****	****	****	****	****	****				*	.08								****	.30	. 10				
rtinsburg	do				.11	. 10		****	****		****	T		****				T	-							****		.38 T.	T.	****			
per Tract			.06		. 15	.35	. 10	T.		****		**				****			T.	T.				. 55	. 90			T.		****			
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	Coast		. 06	****	. 16	****	. 32		T.		****	. 10	****	****			****	****	. 03 1	1. 18					. 60								
timore			. 13		.08	- 63	. 02				T.	. 03		***				. 01	. 25	. 51				. 06			. 20						
abridge			. 08	04	. 16	20	. 21	****	****	****	****	19		****				****	. 33	. 50				****	. 42			. 03			. 98		
stertown			. 02	05	. 10	35	05	. 25		****		06				****	****	****	10	. 90 .			****	****	50	10		87	. 20	****	. 90		1
wsville	Potomac		. 22		. 13	. 20	. 00	. 44	T.			. 00					****	T.	. 73	T.					. 46	. 40	. 44	T.					
r Spring				. 20		. 58	. 20												T.	. 37					. 80			. 42	. 05			. 20	
man			. 28		. 38	. 30						. 10							. 70 .						. 60		****	1.02					
ege Park	do		. 11		. 16	. 42	. 27					. 10	T.						. 08	.74					. 60						1.32		
nberland	Const		. 17	. 05	. 47	T.				Т.		T.	. 25						m	. 13 .				****				T.	Т.		. 36		4
dington	Coast		. 1.9	11	. 09	. 18	95	****	****			15		****		****			T.	. 82													
ton			. 12			. 25	. 33			****		. 20							. 56						48	****		. 70		****	95		
	Potomac					. 33													. 23	2	2.00				. 75			1,00					
lston	Coast		. 22		.14	. 31	. 22					. 05							. 15	.74					.72			. 75					-
derick	Potomac		. 19		. 20	. 47	. 38						T.	****			****	. 02	. 30	. 70 .					. 70			. 56	T.		1.30		-1
stburg	do						. 21	****	****	. 05	****	****	. 08		****					. 13 .				PO.	. 85	****		. 23	. 10		. 50	.32	d
	do		. 18		. 29	.50	. 30									****			. 05	. 76 .				. 70	. 60	. 00					.72		
ce. dysville	do		25		. 18	. 30	. 30											T.	. 15	. 65 .					58			. 48			. 97		1
	Coast		. 16	****	.07	. 30						. 03								. 53 .					.50			. 80		****	1. 32		1
rel			. 08		. 16	. 40						. 05							. 04	. 48 .				. 60				. 90		****			1
nardtown	do		. 50	. 15	. 10	. 20					.07								. 24	. 63 .					. 47			. 43					
rovia	Potomac		. 19		. 17	. 42	. 20										****		. 21	. 88 .					. 61			. 52			1.36		4
omoke City				. 17	*	. 48		****		T.	****	****							. 28					T.	. 55								d
cess Anne			. 17		. 30	. 19	. 04			T.		. 11							. 29					T.	. 53		****	. 69				. 04	78
kville	Potomac Coast		. 10	05	. 18	. 30	19	. 02	02		****	59	12				****	****	45	. 35 .					- 11			. 68			1. 30		
mons			. 08		. 33	. 22			T	T.	****	. 09	. 14							. 48 .					45		T.	. 40					
lersville	do		. 05	.06	. 06	. 35	. 65					. 20							. 10	. 36 .					1. 10					0.000			
oma Park	do			. 15		. 53	. 20			T.		. 03	. 10						. 05	. 75 .					. 30	. 10		1.05	. 15		. 30	. 97	7
son			. 14		. 07	. 35	. 17												T.	.71 .					. 68			. 76			*	1.35	1
Bibber	Potomoo.					. 31	90	****	****	****	****									. 15 .		***		00	. 95	****	15	. 93		****	1.68		,
ternport	Potomac Coast				.30															65 .							. 15					. 03	
dstock				.07	. 00	. 40	. 67					. 03							18	. 00 .				. 45		****	. 00	. 61		****	1, 39		
Delaware.			-								-								1		1							-			30		
	0		1783			_	-												_														1
ware City	Coast		T.	. 16	T.	Т.	. 43		****			T.	T.						T.	. 45 .		***			. 49			. 12		****	2. 25		
ord	do		. 65	20	04	. 50	95		m	****	****	10		****			****		66	. 13 .		***		***	1.00			1.57			. 89	* * * *	1
sboro	do		40	. 00	. 10	. 49	. 20		1.			. 19							40	90 .		***		****	95			60	****		. 55		
ord	do		T.	. 26	. 08	. 27	. 13					. 14							60	. 19 .					. 40			. 71			. 66		
nington	do		. 30		. 03	. 07	. 36	****											. 08	. 55 .					1. 20			1. 10			1.54	****	
rict of Columbia.													1		-																		1
	Canada		7.4		0.1		0.4	m	m	TD.		00						m	05	0.				00	00			-			1 10	ar.	1
	Coast		. 11		. 24	. 54	.01	T.	T,	T.		. 08				***	****	Т.	25	. 64 .	***		***	. 38	. 20		. 16	. 39	****		1. 12	T.	
Virginia.		1										1			-									-									1
eper	Rap'han'k Shenandoah.		. 20		10	. 56	05			· · · ·		. 07						m	67 .					m.	. 50		. 10	m.			1 40	1.85	1
Enterprise	Chart		. 10 .		. 10	. 27	. 21		04	T.		10						Т.	16	. 34 .				T.	. 60		. 22 T.			- 1	1. 45		
ville	Ran'han'h		05	01	1.4	90	20	****	. 04	. 19		. 12	***	****		***			03	70				1.	60	****	T.	. 90			. 20		1
oln	Coast Rap'han'k Potomac			. 05		. 78	. 10			****	****	. 00	***	***		***	****	. 25	54	. 10 .	***		***	***	. 62	****		. 32			1.12	.02	1
nt Weather	do			. 02	. 39	. 60	. 01											. 10	09	. 44				.21	. 41		. 06	. 25			. 94	. 02	4
ntico	do		. 07		. 04	.11						. 02						!	T						. 47			. 08			. 11		1
nt Weather	Shenandoah.		. 13		. 24	. 27						T						.06 .	26 .						. 56			. 18			1. 41		ı
Saw]	Rap'han'k				. 30	. 50	7.0			T.				700					10	. 65 .					. 30		. 25				1. 05 1. 10		1
					7.5	72	133					- 1										1										-	1

^{*} Precipitation included in that of the next measurement,

‡ Separate dates of falls not recorded.

Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—Maximum and minimum temperatures for December, 1912. District No. 1.

						Mai	ine.							-			Ms	assacl	nusetis.				Pro	vi-	C	onnec	ticut.	
Date.	Eastj	part.	Green	ville.	Ore	no.	Portl	land.	Pres	que le.	Run	aford lls.	N.		Amh	erst.	Bosto	on.	Midd		Nantu	cket.	dene R.	00,	Crea		Hart	ford.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	26 50 50 41 41	19 20 29 31 33	24 40 46 37 42	10 - 4 22 19 30	40 43 52 42 41	18 12 37 22 25	33 52 52 45 45	23 25 31 30 33	32 38 40 58 35	20 13 19 6 16	29 42 46 43 43	12 14 24 24 24 31	39 56 50 49 46	22 22 26 25 27	42 57 52 51 44	20 27 32 32 32 30	41 60 57 52 48	27 33 42 43 41	40 58 58 49 50	16 23 37 27 32	40 57 55 50 50	32 35 41 43 42	42 60 58 53 52	26 30 37 39 40	43 53 46 43 46	25 30 32 32 32 33	42 50 58 50 47	27 31 38 37 39
6 7 8 9	49 47 39 35 43	40 20 20 6 16	41 47 27 28 33	30 16 9 - 5 6	49 50 41 40 41	28 28 18 5 8	58 47 37 34 42	44 29 29 9 24	37 49 25 30 33	16 16 7 - 2 - 1	53 43 34 18 38	34 24 23 3 13	61 44 40 26 45	41 22 22 22 8 26	65 40 42 28 44	39 30 23 12 25	69 46 49 37 49	45 34 32 15 30	63 56 47 42 46	37 36 18 15 20	57 53 49 45 51	47 37 34 20 33	68 47 48 30 48	45 32 30 14 29	61 46 41 34 36	40 30 23 6 17	67 45 46 31 47	41 31 25 13 26
1 2 3 4 5	43 36 20 30 40	36 5 1 20 29	36 28 15 22 39	27 5 - 3 12 19	45 46 30 31 41	34 21 2 12 12 21	44 38 27 34 43	38 17 14 22 28	36 30 10 17 35	- 1 6 -15 - 8 17	42 33 24 28 37	31 14 11 12 24	44 37 26 34 45	37 18 14 20 20	42 35 28 33 46	35 20 15 22 20	45 40 31 38 51	40 22 18 28 32	45 42 29 40 50	41 25 15 20 16	51 43 36 41 50	41 24 21 33 36	46 39 30 38 49	39 21 17 29 29	39 30 20 36 45	28 17 7 15 24	44 - 38 - 28 - 41 - 49	38 19 10 21 21
6 7 8 9	41 34 40 50 38	34 17 17 38 28	34 33 28 35 35	30 7 10 28 21	42 42 37 40 44	31 18 15 25 4	40 37 32 41 38	32 24 27 32 30	. 28 35 34 34 36	10 30 13 26 23	40 28 32 39 36	30 16 26 32 27	43 34 35 42 37	30 23 29 35 30	43 40 32 40 35	32 22 32 34 31	48 43 45 45 39	38 30 37 36 35	47 44 45 46 40	24 22 29 38 30	47 43 57 57 41	38 33 43 39 36	45 42 40 46 40	33 28 35 36 33	40 41 45 40 33	30 22 32 32 29 25	44 44 40 46 38	3 3 3 3 3
1 2 3 4 5	28 12 25 18 20	10 7 11 13 10	21 14 20 14 22	4 3 5 6 8	38 32 28 28 28 28	9 5 8 4 2	34 25 30 22 34	16 15 22 16 16	23 11 17 12 19	5 0 - 3 - 2 5	23 22 27 22 32	12 11 16 14 16	35 32 31 24 37	20 16 19 18 13	38 36 32 24 40	28 22 23 12 3	42 36 36 34 38	28 23 28 21 21	40 37 34 32 38	27 19 22 18 0	44 37 38 34 34	35 28 30 26 25	42 37 34 28 39	33 26 27 21 19	36 35 30 26 39	24 22 18 15 17	41 38 33 27 41	3 2 2 2 2
6 7 8 9	39 41 28 33 48 43	20 28 14 13 30 36	38 27 25 32 32 41	12 19 11 8 19 29	36 36 34 34 38 50	7 15 21 - 5 18 35	42 35 32 40 48 48	21 29 21 20 34 39	37 26 25 25 34 39	3 19 13 - 1 25 28	32 33 30 36 40 43	12 19 14 13 24 28	44 35 32 42 44 47	9 27 23 24 33 34	44 37 35 40 46 48	14 32 26 26 32 37	48 41 36 46 58 52	28 35 29 32 40 42	44 39 34 42 55 53	6 23 27 28 32 33	46 49 37 46 54 48	29 35 31 34 43 40	46 41 36 45 55 49	26 33 30 30 39 36	40 35 30 39 36 41	21 29 20 18 28 26	45 38 34 44 53 48	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ıns	36.4	21.0	30.8	13.6	39.3	16.2	39.1	25. 5	30.3	9.8	34.5	19.5	39.9	23.6	40.8	25.4	45.2	31.8	44.7	24.4	46.5	34.3	44.3	30.4	38.9	23.7	43. 4	29,
	N	ew						New ?	York.										I	enns	ylvanis	à.					A +T	antie
Date.	Hav	ven, nn.	Add	lison.	Alb	any.		gham- on.		lian ike.		ittle alls.		ew ork.	Eve	rett.	Han			ila- hia.	Serai	nton.		ate lege.	We	ells- ro.		, N. J
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	. Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	. Min
1 2 3 4 5	45 58 57 50 52	28 36 40 38 41	41 52 54 50 51	15 34 35 27 27	38 55 52 50 47	23 37 30 30 30 32	40 53 44 48 47	15 39 33 34 32	46 42	- 5 23 25 20 20	30 50 48 44 42	17 29 30 29 29	45 60 52 49 51	45 41 38	57 56 56	28	53 51 47	30 38 39 36 42	54 50	35 41 42 39 44	53	21 39 37 37 39	55 57 48 54 46	33	42 50 53 51 46	14 35 34 29 30	52 58 57 51 50	4 0000
6 7 8 9	32	45 34 32 17 30	65 46 44 38 48	43 27 25 11 22		42 31 18 10 27	65 38 42 28 45	38 30 14 13 25	50 33	42 21 22 - 4 18	60 40 38 25 44	24	63 48 44 30 44	35 29 17	60 48 46	20 17	45 46 31	45 34 29 19 26	57 48 36	49 36 36 21 29	41 29	39 30 19 13 25	64 42 43 31 45	27 13	63 54 39 37 47	41 27 25 8 22	67 55 50 41 48	
1 2 3 4 5	39 30 42	39 22 18 27 29	44 35 28 41 51	33 14 12 27 21	30 37	35 20 18 26 28	41 27 30 38 47	27 12 12 30 27	19 27	24 9 7 14 23	30 27 32	16 20 21	45 39 30 42 50	19 18 27	48 36 48	15 12 15	38 33 47		42 33 44	40 24 19 29 35	33 30 41	15 29	32 42	14 10 25	43 37 27 47 48		48 42 36 47 53	
6 8 19	44 43 48	34 31 37 37 33	44 43 42 43 35	35 27 29 35 26	42 47	30 25 32 35 32	· 38 42 48 47 34	38 30	29 38 39	25	30 42 38	20 28 28	52 54	34 45 31	45 46 45	28 30 28	40 45 46	32 37 32	47 54 56	43 35	43 53 52	30 42 30	40 46 40	27 32 26		25 32 29	54 55	5
21 22 23 24 25	36 29	33 27 28 21 17	34 35 34 38 45	29 24 22 24 26	34 34 26	26 20 24 18 18	34 34 30 28 38	28 23 22	28 25 23	13 10	29 30 26	15 16 18	38 36 32	29 27 24	36 35	18 19 14	37 36 36	26 26 26	39 40 33	29 30 26	33 31 30	24 26 23	34 32 34	20 18 23	34 34 37	17 22	36	0
26 27 28 29 30	38 36 43 53	27 33 28 27 38 37	50 41 33 46 42 50	32	36 36 40 45	37	44 40 30 43 44 48	24 25 20 37	31 31 40 37	11 12 20 25	37 28 36 38	28 23 18 32	34 42 51	2 34 2 29 2 28 3 38	45 39 49 47	5 25 6 33	39 39 41 46	30 29 21 35	43 40 44 49	35 32 29 39	37 34 42 47	26 26 22 37	39 33 48 44	27 18 25 35	38 33 46 41	29 24 9 32	56 46 45 58	0
	44.6							1						32. 2		21.5			47.0			28.3		26. 1			48.	

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 1—Continued.

				New	Jersey	•			Mar	tins-				Mary	land.				Mills	boro.	Was	hing-			Virgi	inia.		
Date.	Bridg	geton.	Phil	llips- rg.	Sus	sex.	Tren	nton.	burg Va	.55	Balti	more.	Dar	ling- n.	Fred	erick.	Wes	tern-	De	ol.	ton,	D. Č.	Frede		Staton		Wo	ood- ek.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1 2 3 4 5	55 62 58 50 50	26 38 37 32 45	45 57 50 48 48	23 33 35 32 40	45 54 54 46 45	19 32 37 28 36	52 62 58 48 50	24 32 39 32 41	51 59 50 47 45	26 27 39 33 38	48 60 52 48 48	34 43 41 40 46	46 54 56 48 47	24 37 35 32 40	48 54 54 47 47	24 29 42 32 43	51 61 54 50 50	25 32 38 31 44	64 68 63 54 52	29 42 42 32 48	53 59 55 48 49	27 39 37 36 46	55 61 59 49 51	25 31 40 33 45	55 57 54 55 60	29 34 34 40 48	57 59 58 49 50	2 3 3 3 4
6 7 8 9	50 45	49 34 30 20 27	62 47 43 30 44	45 28 25 15 21	58 57 40 41 44	43 29 23 14 22	67 57 47 45 46	46 33 28 17 24	70 46 49 33 48	44 39 26 20 20	71 57 48 37 48	47 40 37 23 28	69 65 45 35 40	45 37 31 19 21	70 61 47 47 43	44 38 25 20 20	70 62 47 42 57	45 34 25 17 26	71 74 52 48 49	51 42 35 24 25	73 56 49 36 48	48 36 33 23 28	73 67 53 48 51	48 42 32 22 22	68 51 49 37 49	54 44 37 20 28	72 64 51 46 50	4 3 2 2 2 2
11 12 13 14	40 36 50	37 24 19 24 24	43 38 27 42 49	35 19 16 21 22	42 41 26 42 51	33 21 14 21 21 22	44 41 32 47 55	35 24 17 22 24	45 28 39 50 49	20 21 18 20 22	46 43 38 51 48	41 23 20 29 31	42 39 32 48 48	35 22 11 20 24	47 43 37 49 49	37 21 16 22 20	49 49 46 53 55	39 16 14 24 21	61 50 37 51 57	44 21 15 22 23	46 44 37 51 54	41 23 19 24 26	47 43 40 53 59	42 26 12 22 22	43 31 39 51 55	39 19 13 31 26	46 43 42 54 59	3 2 1 2 2
16 17 18 19	54	29 26 45 35 29	47 38 44 50 42	31 26 37 32 30	42 40 41 45 39	31 27 34 29	53 45 47 53 45	28 26 39 36 29	50 42 48 38 49	22 28 29 37 24	52 48 51 52 50	42 35 44 34 30	51 45 46 48 45	31 26 38 35 25	51 45 43 48 49	30 26 37 35 24	51 44 47 48 49	41 27 38 29 24	55 63 62 58 49	34 26 39 33 25	53 53 54 54 52	33 30 44 33 27	59 60 58 58 54	30 26 46 40 23	55 54 54 38 48	34 27 46 33 27	54 45 46 47 51	2 2 3 3 1
21 22 23 24 25	δ1 40 40 34 40	29 24 23 22 20	42 37 35 31 38	27 24 23 16 12	43 40 35 28 41	28 25 21 22 12	49 41 39 33 44	28 25 22 24 12	43 39 38 37 40	24 24 24 24 17	48 39 40 36 44	34 40 27 27 27 27	45 39 37 32 39	29 22 20 24 15	44 38 38 35 40	26 26 22 26 12	42 48 39 40 58	24 23 17 25 23	54 39 41 34 43	28 25 21 22 18	49 41 40 35 44	32 29 21 27 19	55 52 39 39 47	32 26 20 27 14	47 41 35 40 43	35 23 19 20 18	52 43 39 40 43	1 1 1 2
26 27 28 19 10	48 40 41 48 55 50	10 34 29 20 36 29	35 37 33 41 42 48	6 27 28 15 34 31	41 35 36 40 43 45	14 25 27 19 30 32	45 38 37 48 46 49	11 26 28 17 35 32	34 40 42 44 50 47	7 10 28 20 27 28	44 43 44 45 52 48	22 36 32 28 38 34	37 40 38 44 46 46	10 30 25 16 34 27	30 40 42 44 47 45	5 24 27 18 34 26	48 40 41 49 49 55	10 29 25 24 35 25	55 49 47 54 64 52	17 36 30 23 43 29	50 43 47 48 54 46	19 35 31 25 37 30	51 46 51 54 55 53	20 35 26 24 38 26	45 41 48 52 51 46	23 38 24 32 35 29	43 41 50 46 52 47	3: 2: 2: 3: 2: 3: 2:
Mns	49.1	29.2	42.4	26.1	42.6	25.7ª	47.2	27.6	44.8	25.4	47.7	33.6	44.9	27.1	45.9	26.8	49.8	27.4	53.9	30.5	49.1	30.9	52.9	29.6	48.1	30.9	49.6	25.

^{*,} b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the records.

§ § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 2, SOUTH ATLANTIC AND EAST GULF STATES.

CHARLES F. von HERRMANN, District Editor.

GENERAL SUMMARY.

December, 1912, was an agreeably mild winter month, without striking meteorological features in most portions of the district. The temperature was above normal, except in extreme western Mississippi, the excess reaching nearly 5° in Florida and 3° in North Carolina, recalling the exceptionally warm winter of 1889. The precipitation in the States bordering the Atlantic ranged between 2.50 and 3 inches, indicating a deficiency of over half an inch, but in Alabama and Mississippi it was considerably in excess, especially in Mississippi, where the month was the wetest on record. Small amounts of snow occurred in extreme western North Carolina and in Virginia.

No cold waves occurred, and the daily ranges of temperature were relatively small for a winter month. The wind movement was less than usual, gales exceeding 40 miles an hour occurring at only four places, two on the 27th and two on the 30th. There was much cloudiness in the Gulf States, and on several days dense fogs prevailed over extended areas in the central portions of the district.

The lowest atmospheric pressure for the month occurred generally on the 23d or 24th in connection with the movement of a storm from the mouth of the Mississippi to the North Carolina coast, with a minimum of 29.55 inches at Hatteras, N. C. In the extreme northern portion of the district the maximum pressure was registered on the 1st, Richmond, Va., reporting 30.58 inches, but elsewhere the highest atmospheric pressure occurred generally on the 12th or 13th, with a crest only slightly lower.

TEMPERATURE.

The greatest excess in monthly mean temperature occurred in Florida, where the State mean was 4.8° above normal, and at a few individual stations about Tampa, on the west coast, the excess reached 6°. Over most of the territory north of Florida the average excess was about 2.5°, while toward the northwest the temperature diminished to normal or slightly below in the northwestern portion of the Mississippi area. The first eight days of the month were quite warm throughout most of the district, and on various dates from the 3d to 7th maximum temperatures exceeding 80° were registered in all States, except Virginia and Mississippi. The coldest weather for the month occurred during the second decade with the minimum temperatures about the 13th or 14th, but during the whole of the second and third decades the fluctuations were comparatively small, temperatures slightly below normal predominating. The lowest temperatures on the 13th ranged from 8° in Virginia to 24° in northern Florida. Frosts, however, were frequent on other dates, occurring, for example, in Florida on the 10th, 19th, 21st, 25th, and 29th. The mean temperature for the entire district was 49.4°, or 2.5° above normal. The State means varied from 42° for Virginia to 63° for Florida; the individual means at a great majority of the stations north of Florida ranged between 40° and 55°, in Florida between 55° and 65°, exceeding 70° at a few stations. The highest monthly mean was 73.6° at Key West, closely followed by 72.6° at Miami, Fla., and the lowest was 35.2° at Lexington, Va. Highest recorded 86° at 4 stations in Florida; lowest 8° at Hot Springs, Va.

PRECIPITATION.

Over the country east of the eighty-fifth meridian, which includes the entire district except Alabama and Misssissippi, the rainfall during December was moderately below normal, but well distributed throughout the month, the State averages varying only from 2.50 to 3.50 inches. There was also comparatively little snowfall, appreciable amounts being measured only in extreme western North Carolina and in Virginia. On the other hand, the precipitation was heavy in Alabama and Mississippi, with State averages, respectively, of 6.44 and 9.83 inches, indicating an excess for the Mississippi area of 4.62 inches. In the region of maximum rainfall which includes the central and northern portions of the Mississippi area and central-western Alabama, amounts exceeding 10 inches for the month occurred at 16 stations. The largest amount in Alabama was 11.34 inches at Demopolis, and in Mississippi 15.14 inches at Columbia. Less than an inch occurred during the month at a few widely separated places in Florida, South Carolina, and Virginia, with the smallest amount, 0.50 inch, at Cape Henry, Va.

Scattered rains were frequent, and during the longest period of fair weather in the northern portion of the district, namely, from the 13th to the 17th, the rainfall was most frequent in Florida. In Alabama and Mississippi the heaviest rains fell on the 4th to 7th, in other portions of the district on the 23d to 26th. The maximum fall in 24 hours was 5.25 inches at Tupelo, Miss., on the 4th-5th. The number of stations outside of Mississippi reporting heavy 24-hourly rains was small.

The average snowfall for the Virginia area was 1.6 inches, for North Carolina 0.4. In other portions of the district the snowfall was inappreciable. The largest amounts were, in Virginia 5 inches at Danville, in North Carolina 6.9 inches at Brewers. The snow fell chiefly on the 23d to 24th.

MISCELLANEOUS PHENOMENA.

The prevailing winds for December were from the southwest in the States from Georgia to Virginia, northeast in Florida and from the north in Alabama and Mississippi. The hourly velocity exceeded 10 miles at Hatteras, Atlanta, Pensacola, and Sand Key. The

maximum velocities were: Richmond, 42 miles southwest, 30th; Norfolk, 58 miles west, 30th; Hatteras, 52 miles northwest, 27th; and Atlanta, 48 miles west, 27th. The average number of clear days ranged from 9 in Georgia, Alabama, and Mississippi to 15 in Virginia and North Carolina, and the maximum number of cloudy days was 17 in Mississippi. The percentage of sunshine was generally low; the average for the district was 146 hours, indicating 46 per cent of the possible amount. The maximum was 63 per cent at Miami and Richmond, and the minimum 31 per cent at Hatteras and Meridian.

RIVER CONDITIONS.

The rivers in the eastern portion of the district were below the normal flow for December and the fluctuations from day to day were unusually small. The mean stages at Cheraw, S. C., on the upper Peedee and at Conway on the Waccamaw were the lowest for December during a period of 20 years. In Alabama stages favorable for navigation prevailed during most of the month. Moderate floods occurred in some of the rivers of Mississippi without any great amount of damage being done. The following report was made by Mr. J. A. Jaqua, official in charge at Meridian, Miss.:

After a period of six days of continuous rains warnings were issued on December 7 for floods in the Pearl and Pascagoula Rivers. Owing to the long period of dry weather that had preceded the commencement of the winter rains and the low level of the waters in all the streams the warnings were conservatively worded. The damage done by the flood waters in the Pascagoula River is estimated at about \$1,000, distributed between the logging and trapping interests in the vicinity of Merrill, Miss., where the highest stage reached was 19.9 feet. The warnings enabled lumbermen to save their logs, and people removed live stock from the swamps. At Pearl River, La., the maximum stage was 15.1 feet on the 11th, and the river remained above flood stage until the 15th. The damage done by the flood waters in the Pearl River is estimated at \$1,000, representing losses sustained by railroads, and by the enforced suspension of business.

River is estimated at \$1,000, representing losses sustained by railroads, and by the enforced suspension of business.

In consequence of the rains of December 22 to 23, flood warnings were again issued for the Chickasawhay, Pascagoula, and Pearl Rivers. Reports from Merrill and Pearl River indicate that the warnings were of considerable benefit. A large number of live stock in the lowlands of the lower Pearl River were removed to places of safety, thereby saving thousands of dollars. A small herd of cattle was lost at Merrill because of the failure on the part of the owner to heed the warning.

CLIMATIC SUMMARY FOR THE YEAR 1912.

Climatic conditions during the year in District No. 2 were peculiar in several respects. The distinguishing features were the continuous cold weather during the first three months of the year, the relatively cool summer, and the excessive rainfall during spring. January, February, and March gave an average deficiency in temperature of 3.5°. Temperatures below zero occurred in January and February in Virginia and North Carolina, and in January also in Mississippi. The summer months were agreeably cool, showing a pronounced deficiency in June and moderate deficiencies in July and August. On the other hand, September and October were excessively warm, while for mildness December recalled the famous warm winter of 1889. It is odd that between two warm and pleasant months, October and December, a cold and blustery November should have intervened.

The excess in rainfall for the year for the district at large was 7.54 inches. The spring and early summer

months—March to June inclusive—were extremely wet, and in consequence floods in the rivers were frequent and disastrous, and farm work was greatly interrupted. Much snow fell during January and February, traces occurring even as far south as Florida, and a remarkable snowstorm occurred the night before Thanksgiving Day, during which measurable amounts fell as far south as Thomasville, Ga.

The following table presents the monthly mean temperatures and the average rainfall for the district with departures from the normal for the year 1912:

Month.	Temper- ature.	Depart- ure.	Precipi- tation.	Depart- ure.
	• F.	• F.	Inches.	Inches.
January	41.2	-4.6	4.82	+1.07
February	43.3	-3.5	4.49	-0.22
March	53.8	-2.4	7.52	+3.02
April	64.9	+2.6	6.26	+2.77
May	71.9	+1.0	4, 43	+0.64
June	75.1	-2.1	6.34	+1.40
July	79.3	-0.3	4.96	-0.77
August	78.7	-0.3	4.25	-1.40
September		+2.5	5. 61	+1.47
October	66.0	+2.2	2.47	-0.5
November	52.4	-2.0	2.37	-0.31
December	49. 4	+2.5	4. 41	+0.4
Year	62.7	-0.8	57.93	+7.5

The lowest temperature registered during the year was 16° below zero at Lexington, Va., on January 14; and 5° below zero was recorded at Hot Springs, Va., on February 5. The lowest monthly mean temperature was 20.8° for January, also at Hot Springs, which station, lying near the extreme northern boundary of the district, had also the lowest annual mean temperature, 48.1° (June estimated). The highest monthly mean temperature was 83.8° at Lucerne Park, Fla., for August. Although the highest monthly and annual means generally occur in Florida, the annual mean at Key West for 1912 being 77.4°, the highest actual temperatures are not often registered in that State. The highest temperature occurred late in the year, 109° on September 1 at Saluda, S. C.

March and June were the wettest months of the year. The largest amount of precipitation for one month was 26.83 inches at Pinellas Park, Fla., in June. Merrill, Miss., received 20.16 inches in April. The smallest amount was 0.08 inch at Tallahassee, Fla., in October. The maximum amount in 24 hours was 9.50 inches at Blountstown, Fla., on April 20–21.

The change in conditions with respect to precipitation from 1911 to 1912 was most striking, especially in the Gulf States. In the Monthly Weather Review for June, 1911, in an article on the drought of 1910-11 in north central Georgia, it was shown that the rainfall for the period July, 1910, to June, 1911, at Atlanta, Ga., was 28.11 inches, indicating the remarkable deficiency of 21.25 inches, or no less than 43 per cent of the normal annual rainfall. During the similar period of 12 months from July, 1911, to June, 1912, the rainfall was 64.63 inches, or 15.73 inches above the annual normal. The total rainfall at Atlanta for 1912 was 64.09 inches (normal, 48.90 inches), a record only slightly exceeded in 1888, when the annual total was 64.98 inches. At many stations in the South the rainfall reached enormous proportions, breaking all previous records.

Table 1.—Climatological data for December, 1912. District No. 2, South Atlantic and east Gulf States.

			years.	Tem	perature	e, in c	legre	es Fab	renb	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	0.5	ainy or m	Number of clear days.	7 00	Number of cloudy days.	Prevailing wind tion.	Observers.
Virginia.																				
ArvoniaBuchananCallavilleCape HenryCatawba	Buckingham Botetourt Brunswick Princess Anne Roanoke	350 820 250 20 1,760	8 8 18 38 1	42.8	+ 4.9 + 2.3 + 3.1	72 77 75 66	6 6	12 14 27 21	13 13 14 10	39 39 27 33	2.95 2.78 2.63 5.19 3.63	- 0.07 - 0.12 - 0.62 + 1.76	0.62 0.73 0.68 3.17 1.60	3.0 4.0 T. 0.1 3.0	10 9 9 13 8	16 13 15	9 10 4 8	7 5 14 8	nw. e. sw. w.	Rev. Plummer F. Jones. D. D. Booze, F. M. Gage. U. S. Weather Bureau. State Board of Health Sar
Charlottesville	Albemarle	800	23 18		+ 0.3	74	6	14	23†	28	3. 15	- 0.02	1.68	2.0	9 8	15	2	14		tarium. Leander McCormick Obsy.
Clarksville,	Mecklenburg Fluvanna Pittsylvania	286 246 413	14 12	38.9	+ 1.8	69	6	10	25	39	2. 16 3. 07 1. 64	- 1.83 - 0.54 - 1.82	0. 45 0. 65 0. 56	T. 2.0 5.0	9	15	8	8	sw.	J. A. Ligon. Chesapeake Ohio Ry. C. G. Watkins.
Diamond Springs	Princess Anne Chesterfield	25 325	1	46.2		75	6	20	13	37	4.74 2.97		2.30 0.70	2.0	8	17	11	3		Virginia Truck and Exp. St. Dr. E. W. Magruder.
Hampton Hot Springs	Elizabeth Bath Southampton	2, 195 87	29 20 3	44.8 35.8 43.2	1	71 64 77	6 5 6	17 8 15	13 13 13	33 35 38	2.75 1.50 2.24	- 0.24 - 2.68	0.90 0.67 0.80	4.5	8 4 5	12 16	8	15 7	S.	
assiter	Goochland	100	35	35.2	0.0		6	8	25	34	3.85	- 0.62	0.90	T. 4.0	9	22 18	3	6		T. J. Davis.
Newport News	Campbell	685 55	9	41. 4 45. 8	+ 3.1	73 76	6	18 23 27	26 13	40 34	2.36 2.89	- 0.91	0.59 0.76	2.5	12 14	10	6 9	15 8	sw.	U. S. Weather Bureau. C. W. Ashby.
Norfolk	Norfolk	91 334	8	47.7	+ 4.7	74	6		9	27	1.90	+ 1.16	2.49	0.3 T.	13 6 13	13	6	12	S.	U. S. Weather Bureau. W. J. Abbitt.
Roanoke	Henrico Roanoke Franklin	907 1, 150	33 2 18	43.2 38.7	+ 2.2	67 65	6	17 14 12 11	26 13	30 30 42	2.84 1.62 2.40	- 0.16 - 1.11	0.75 0.48 0.55	0.2 3.8 2.0	5 9	13 17	7	11 7	8. W.	U. S. Weather Bureau. Reese F. Bell. G. W. B. Hale.
Ruckersville	Greene	625	1 24	39.8	+ 4.0	72 77	6	11 19	13 26 13 13 26	35 36	2.71	- 0.15	0.50	3.0	11 7	15	1	15	sw.	Dr. Jesse Ewell. B. W. Jones.
West Point	King William James City	70	21	44. 4 43. 0	+ 2.3	75 75	6	17 16	13 13	34 31	3.17	+ 0.31	0.67 0.56	T.	13	19 15	3 6	9	s. sw.	C. L. Maskey. Eastern State Hospital.
North Carolina.																				
Albemarle	Stanly Carteret	700 10	11	46.3	+ 4.4	76 70	6 5	17 31	13	40 26	2.32 4.03	- 0.39	0.56	0	14 13	19 14	2 3	10 14	SW. SW.	M. J. Harris. Lewis Radcliffe.
Belhaven	Beaufort	1,950	3 15	41.7		73	6	12	13	45	6. 10	- 1.45	3.42	6.9	7 13	19	10	2 13	n. w.	A. L. Bell. W. L. Brewer.
aroleen	Rutherford	806 500	12	43.5	+ 2.7 + 2.3	71 75	6	18 14	28 13	34 42	2.39	- 2.90	0.45	T.	12 13	10 13	12	9 12	nw. w.	S. B. Tanner. J. A. Smith.
Chapel Hill	Orange Mecklenburg	500 773	54 36	48.71	+ 6.5 + 2.5	79 73	6	18 24	13 13	35 28	1.34	- 2.52	0.48	T.	13	10	7	14	3W.	Prof. A. H. Patterson. U. S. Weather Bureau.
Chimney Rock	Rutherford Durham	1, 150 406	2 3	44.2	T 2.0	75	6	20	13	34	3. 18	- 2.02	0.60	1.0	9	16	7	8	w.	J. M. Flack. J. C. Michie.
Cagletown	Northampton Chowan	66 30	7	45.8 47.0	+ 4.0	75 75	6	19 22	13 13	37 37	5.34	- 1.36	1.33	T.	12	13 15	13 4	5 12	SW.	J. T. Elliott. E. R. Conger.
Elizabeth City	Pasquotank	8	1	46.0			5†		13	37	3. 25 2. 68		1.40	0	6		0	21	sw.	W. J. Simmons. J. W. Hall, jr.
Enfield (near)	HalifaxCumberland	99 170	25	48.4	+ 4.7	77	6	20	131	45	4.06	- 1.97	1.12	0	9		4	15	S.	T. S. Inborden. Frank Glover.
lobe (near)	Caldwell Wayne	1,800 102	42	40. 2 45. 0		72 75	6	15 19	13	37	2.36 2.48	- 1.04	0.72	3.0	6 12	14	3	14		Julius L. Gragg. Mrs. J. J. Robinson.
Forge (near)	Caldwell	1,358 656	10	40.0		1 0000	6	14	13	40	1. 85	- 2.23	0.60	T.	10					A. J. Bagley. Dr. W. R. Goley.
GreensboroGreenville	Guilford Pitt.	843 75	31 19	43.5	+ 2.6	73	6	18	13	29	1.08	- 2.33 - 1.01	0.33	0	6 10		-		ne.	A. H. Horry. R. M. Hearne.
Hatteras	DareVance	11 308	38 19	52.8 44.6	+ 4.0 + 3.9	75 73	6	32	10 13	27 28	3. 13		0.93 1.24	0	13 11			8	nw.	U. S. Weather Bureau. Enoch Powell.
Kings Mountain	Cleveland Lenoir	952 46	14	45.2	+ 5.4	72	6	23 18	141	29	2.21	+ 0.15	0.92	0	10	16	4	11 14		G. T. King. H. C. V. Peebles.
incolnton	Lincoln	994 375	7 21	42.1 45.2	+ 4.3	72 74	6	11 18	14	49 38	2.46 3.37		0.80		8	12 21	11 3	8 7	nw.	S. P. Houser. T. B. Wilder.
danteo	Robeson	102 12	29	48.5	+ 3.4	77	17†	22 22 16	131	37	1. 16 4. 32	- 2.20	0.33	0	11 8	17	8	6	SW.	B. M. Davis. U. S. Weather Bureau.
farion	McDowell	1,425	20	47.9	+ 2.0	74	6	16 22 14	13	35	2.96 3.89		0.66 1.25	0	10		4	12	ne.	Sergt. Thomas McGuire. J. S. Mann.
doncuredonroe	Chatham	145 586	18 18	45.0 46.2	+ 3.2 + 3.6 + 1.3	75 75	6	17	13	46 38	2.46	- 1.00 - 1.10	0.63	0	111	11	5	14	nw. sw.	B. J. Utley. T. A. Ashcraft.
forganton	Burke	1, 135 1, 048	25 24	42.8	+ 2.1	73 73	6	16 13	13	41	2.64	- 1.19 - 0.93	0.85	1.5	12 13		5 4	11 10	SW.	J. B. P. Massey. Prof. A. H. Merritt.
fount Holly	Gaston Nash	616 190	15 8	45. 4		75	6	16	13	42	2.07		0.64	T.	9	14	6	11	w.	J. W. Holland. J. B. Boddie.
veusevewbern	Wake Craven	266 12	30	48.3	+ 1.6	76	6+	17	14	48	3.72	- 0.67	1.01	0	10	9	12	10	8W.	J. B. Hill.
North Wilkesboro(near)	Sampson	1,700	8	48. 0a		78	6	20 17	13	29 49	1.97 2.55		1.00	0	8	10	10	13	W.	Dr. Charles A. Willis. E. J. Conway.
Pinehurst	Moore Chatham	650 480 390	20	43.4	+ 1.9	78	6	20 15	13 12	31 40 30	2,55	- 0.21	1.00	0	7 8 15	13	3	11 12 14	W. SW.	General office. Mrs. J. F. Alston. U. S. Weather Bureau.
Raleigh Ramseur Randleman	WakeRandolph	442	41 5 7	44.8	+ 3.7	73 77	6	23 15	13 13	42	1.96 2.38		0.75 0.33 0.90	. 0	14	14		13	SW.	A. H. York. J. R. Walton.
Reidsville	Rockingham	810 828	13	44.0	+ 5.4	74	6	19 19	13	33 35	1.37	- 2.51 - 1.10	0.51	1.0	9 9	10		10	PARE	E. M. Redd. Barry C. Hawkins.
Rock House	Macon	3,100 210 105	20 17 1	45.1	+0.9 + 1.1	64 71	6 6†		28 121	40	2 75	1 23	1.40 1.20 1.00		7 8			10		H. S. Ledbetter. G. P. Womble.
alemalisbury	Forsyth	1,000 760	17 28	44 8	+ 2.4	74	7	18	13	40	1.35	- 2.63 - 2.24	0.47 0.60		. 7	17	1	13	n.,	Rev. H. E. Rondthaler. Miss Thelma Wilkinson.
Scotland Neck	Halifax	- 80 700	8 16	45.6	+ 1.6	76 74	6	18 12	13	46 40	5.18	- 2.56	2.04	0	9 7	11	7 6	13 11	nw.	J. Y. Savage. C. H. Smith.
Bloan	Duplin	50 151	19	49.6	+ 3.7 + 2.4	75 76	5 6	18	14	45	2.57	- 1.05 - 1.19	1.11 0.84	- 0	10	14	2 8	15 12	W.	D. M. Sholar. Edwin S. Sanders.
Southern Pines	Moore	519 18	22 22 57	47.2	+ 1.6 + 2.6	75. 70	6	22 26	13 28	29 34	2.05	- 1.19 - 1.59 + 0.93	0.60	0	7 15	16	5	10	w.	Mrs. B. H. Beck. Mrs. C. E. Taylor.
tatesville	Iredell Edgecombe	950 50	24 27	44.0	+ 3.3	76 80	6 5	17 19	13 13	40	2.15	- 2.00 - 0.24	0.61		. 8	12	9	10	sw.	D. Matt Thompson. E. V. Zoeller.
ryon (near)	PolkHalifax	1,300	40	46.0	+ 2.3	74 76	6	24 19	13 13	29	3.17	+ 0.63	0.60	0	9	18	0 7	13 13	sw.	W. T. Lindsey. H. S. S. Cooper.
Willard	Pender New Hanover	51	4 41	49.5	+ 4.3	75	6		13	47	2,52	- 0.48	1.07	0	7	14	2	15	s. w.	J. H. Jefferies. U. S. Weather Bureau.

TABLE 1.—Climatological data for December, 1912. District No. 2—Continued.

			years	Temp	perature	, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	- 4	mber o	Da	cloudy days.	wind n.	Obsetvers.
South Carolina.																				
iken. Ilendale nderson atesburg eaufort lackville lairs ownan	Barnwell	565 186 764 656 20 296 293 160	17 23 10 23 25 22 6 10	50.4 47.2 47.9 54.2 51.2	+ 2.4 + 3.0 + 3.4 + 1.5 + 2.4 + 4.3 + 3.9	78 79 72 74 76 78	6 6 6 6 6†	25 30 22 25 29 22	28 11† 28 28 28 28 28	32 33 29 31 26 39	3.40 4.00 2.74 3.62 6.01 3.11 1.30 4.46	- 0.06 - 1.38 - 1.22 + 0.06 + 3.37 - 0.57 + 1.06	1.15 2.00 0.93 1.48 2.40 2.01 0.75 2.03	0 0 0 0 0 0 0	7 6 11 7 8 12 5 10	12 13 13 15 15 12 12	12 2 0 1 8 2 7	7 16 18 15 14 17 12	w. e. ne. sw. nw. sw.	C. E. Carman. Richard Hiers. H. H. Russell. E. J. Hite. Miss Lillian H. Rice. Miss M. E. Lange. J. N. Owens. B. O. Evans.
oxtonlhoun Fallstawba	Hampton Abbeville Kershaw	508 222 562	1 18 45 6	51.7			7†	*****		35	5.65 4.06 1.95 2.12	+ 0.12 - 1.36	2.00 1.27 1.10 0.80	0 0 0	7 11 7 9	16 18 13 12	3 5 1 8	12 8 17 11	w. ne. s.	Thomas D. Williams. L. M. Parker. W. C. Brown. James C. Faris,
happells	Newberry Charleston Chesterfield Oconee Richland	402 48 144 850 351 25	6 41 23 20 25 19	53.6 48.2ª 45.2 49.6		76 75 70 77 78	6 6 6 6	32 23 22 26 24	28 13† 14† 28 14†	29 30	2.08 3.90 2.14 2.30 2.09 3.65	+ 0.75 - 0.99 - 2.50 - 0.81 + 0.35	1.37 1.37 1.05 1.00 1.50 1.70	0 0 0 0 0	11 13 7 11 6	13 4 11 13 12 8	0 8 5 6 5	18 19 15 12 14 22	w. n. s. w. sw.	J. J. Murran. U. S. Weather Bureau. J. H. Powe. Prof. John H. Hook. U. S. Weather Bureau. Paul Quattlebaum.
arlingtondilondistod	Darlington Dillon Bamberg Florence Berkeley	175 100 127 106 51	16 7 24 19 3	43.41 49.8a	+ 3.6 + 1.3 + 2.2	70 77 79 70	17† 6	22 22 23 23 25	14† 14 28 14		2.00 3.30 2.96 3.00 3.74 1.15	- 1.15 - 0.17 - 0.37 + 0.69 - 1.94	1.40 0.86 2.00 0.90 1.80 0.51	0 0 0 0	5 11 9 5 7 4	12 14 8 14	0 0 5 5	19 17 18 12	ne. w. sw.	D. C. McCall, A. E. Rowell, Nathan Jenkins, H. B. McCall, Dr. J. R. Des Portes, H. K. Gilbert.
lorence aston Shoalseorgetown reenvillereenwood	Georgetown Greenville	136 12 989 671	23 18 19 23	52.0 43.7d 45.2d	+ 3.1 + 2.8	79 71 74	6 6 7	27 18	25 14 28 29	40 37 35	2.35 3.16 2.26	- 1.27 - 2.16	0.69 0.79 0.47	0 0	11 8 6	15 12	1 0	15 19	ne. w.	Harry A. Parshall, A. P. Hazard. Spartan Goodlette. M. M. Calhoun.
eath Springs	Williamsburg Pickens Newberry Edgefield Aiken.	568 54 900 711 502	10 23 17 18 2	49.0 45.9 48.0 49.0 49.3	+ 1.8 + 3.4 + 2.2 + 3.0	75 78 72 76 76 75 75	6 5† 6 7 6 6 6	25 22 22 22 26 21 24 22	29 28† 14 13 28 28 28	35 45 37 28 34 29 36	1.88 3.62 2.99 0.90 2.23 2.44 2.12	+ 0.31 - 1.85 - 2.48 - 1.51	0.68 2.00 0.70 0.25 1.48 0.78 0.49	0 0 0 0 0 0 0	8 13 14	11 11 12 21 11 16 9	5 3 7 0 9	15 17 12 10 11 15 16	w. nw. sw. w.	Charlie Bowers. A. O. Matthews. John T. Boggs. J. M. Sease, M. D. William S. Middleton. Joseph M. Johnson. W. G. Peterson.
lzer nopolis	Anderson	873 55 109 209 530 572	6 18 23 23 9 16	49.2 49.2 49.3	+ 1.7 + 3.1 + 4.0	75 75 75 75 73	6 6 6	25 28 28 22 23	20† 14 25 13	38 34 39 35	2.58 3.52 3.59 2.74 2.15 2.21	+ 0.65 + 0.37 - 0.60	0.84 2.00 2.05 1.77 0.70 0.84	0 0 0 0 0 0	7 8 9 6 12	12 15 12 15 8	0 0 6 11	18 16 19 10 12	n. S. W. S.	J. M. Ward. Miss E. P. Ravenel. G. F. Lewis. J. S. Wannamaker. Mrs. F. V. J. Maxwell. E. W. Jeter.
niths Mills ciety Hill sartanburg immerville enton alterboro innsboro	Darlington Spartanburg Dorchester Edgefield Colleton Fairfield	62 75 875 75 620 69 545	16 14 20 14 18 7 21	43.8 52.2 48.9 54.3 46.8	+ 6.7 + 1.6 + 4.0 + 2.0 + 1.1	76 73 77 74 78 73 74	6 6 5 6 9 6	29 21 25 25 25 25 25 25 24	13 14 28 28 27 13	39 39 38 29 37 26 28	2.69 5.19 2.27 5.11	- 0.66 + 0.25 - 1.46 + 1.53 - 1.77 - 0.06 - 2.15	1.68 1.20 0.70 1.34 1.39 1.05 0.80 0.65	0 0 0 0 0 0 0	10 16 10 11 5	13 12 13 1 12 14 19 8	2 7 0 24 8 5 7 12	16 12 18 6 11 12 5	s. n. sw. s.	W. G. Walker. T. Ellison Simpson. F. P. Robinson. Miss E. H. Gadsden. C. A. Long. B. Levy. J. W. Seigler. W. P. Goodman.
emassee		690 23	12 16	49.7	+ 0.7 + 2.1	79	6 4	23	28 29	42	2.66		1.30	0		10	3	18	n.	J. G. Hutson.
Georgia. bbeville dairsville bloany llapaha. thens thanta ugusta ainbridge utler amak anton	Bartow Dougherty Berrien Clarke Fulton Richmond Decatur Taylor Warren	180 772 232 293 694 1,218 180 119 650 613 894	9 20 25 23 30 47 66 20 11 20 21	53. 7 53. 2 45. 6 45. 7 50. 0 51. 8	+ 4.2	80 79 71 68 76 77	6 3 3 6 5 6 6	19 27 26 24 27 27 27 25	14 20 28 25 28 28 20†	39 35 33 23 28 43	1.76	- 1.72 - 1.85 - 1.37 - 1.11 - 0.70 - 1.16 + 0.32 - 1.08	1. 03 1. 50 0. 61 0. 47 0. 90 0. 84 1. 81 0. 62 2. 57 1. 70 1. 15	0 0 0 0 0 0 0 0	7 10 12 13 16 13 12 8 5	12 5 9	3 3 6 7	15 17 16 20 15	W. W. SW.	W. H. Calhoun. Mrs. R. C. Evins. George C. Brosnan. J. F. Rice. C. D. Cox. U. S. Weather Bureau. Do. Mrs. C. O. Wimberley. Mrs. M. F. Wallace. J. A. Chapman. G. W. Evans.
arlton	Madison	557 2,100 262 850 800	13 18 24 20 20	42.8 50.1 47.8	+ 2.2 + 1.9	79 70	6 3 5	20 27 27 27	13† 28 28	32 37 28	2. 15 3. 61 4. 75 3. 82 3. 55 4. 00	- 2.75 - 2.91 - 0.13 - 0.82	1. 98 1. 72 1. 05 1. 11	000000000000000000000000000000000000000	12 10 14	9		***	e.	M. C. Power. A. J. Duncan, A. J. Land. C. T. Smith. Mrs. Sarah E. Cruse. Prof. B. P. Gaillard.
ahlonega. jamond ublin astman atonton	Gilmer Laurens Dodge Putnam Elbert	2,020 452 361 710	20 18 20 8 20	42.4 49.9 52.0 48.2 47.0	+ 2.5 + 1.4 + 4.0 + 2.2 + 4.5	66 77 82 73 71	5 6 6 6	19 25 26 25 26	20 20 25 14	30 39 38 34 34	4.61 5.02 2.77 3.30	- 0.97 + 1.22 - 0.84	1.10 3.24 1.41 1.40	0 0 0	12 11 7 11 12	10 8	12 5	9 18 11 11	n. nw.	R. A. Kimzey. Mrs. M. E. Martin, Mrs. H. T. Bohannon. Prof. W. C. Wright. H. A. Roebuck. Martin V. Calvin.
xperiment. rot Gaines ainesville. illsville. lennville. ore. ranite Hill	Clay Hall do Tattnall Chattooga	166 1,254 1,052	24 33 21 7 13	51. 2 42. 4 52. 8 43. 1 49. 0	+ 1.8 + 0.6 + 1.9	76 70 77 69 76	3 6 7 6 5	25 20 28 18 26	28 28 14 14	37 30 39 39	4. 92 3. 31	- 1.89 - 1.07 - 0.32 - 2.15 - 1.66	1.37	000000000000000000000000000000000000000	10 11 8 11 14 12	6 11 13	18 3 4	7 17 14	. nw. w. n. ne. s. w.	Miss Eva T. Graham. W. C. Walker. George W. Lichtenstine William C. Barnard. H. M. Ponder. George White, ir.
reensbororiffin arrison arkinsvillesbonsbonsbonsbonst Mountains	Greene Spalding Washington Pulaski Lincoln Cobb	598 975 378 235 326	10 23 13 16 5 12	48. 2 47. 8 50. 4 52. 0 47. 5 43. 9	+ 3.6 + 3.8 + 5.0 + 1.4	. 73 72 77 80 . 73 68	6 6 7 6 5	23 24 27 24 21	28 28 20 20 28	† 39 31 † 35 40 38 32	3. 22 3. 79 4. 60 3. 94 2. 48 3. 05	$ \begin{array}{c} -1.30 \\ -1.10 \\ +0.71 \\ +0.32 \\ -2.37 \end{array} $	1.84 0.58 1.23		11 13 5 10 10 11 7	13	9 6	9 19	w. . e.	R. L. Caldwell. J. M. Mathews. C. L. Wood. R. H. Wood. B. J. Du Bose. A. N. Mayes. J. C. Little.
ouisville. umber City acon . arshallville. illedgeville. iillen . ontezuma.	TelfairBibbBaldwinBaldwinBaldwin	150 370 500 276 158	20 3 31 19 24 24 7	49. 8 51. 0 48. 6 51. 6	+ 2.5 + 3.3 + 3.0 + 2.5 + 3.4	73 78 74	5 8 6	28 27 25	25 28 25	32 38 † 32	3. 91 5. 92 3. 57	+ 0.86 - 0.41 + 1.62 - 0.45 - 0.39	1. 98 2. 00 1. 90		10 11 11 13 13	9 9	6	17	e. nw.	Walter A. Hilton. U. S. Weather Bureau. E. C. Bryan. Prof. O. M. Cone. M. G. McComb. J. C. Collins.

TABLE 1 .- Climatological data for December, 1912. District No. 2-Continued.

			year	Temp	erature	, inde	egree	s Fahr	enhe	it.	Preci	pitation,	in inc	hes.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	Prevailing wind tion.	Observers.
Georgia—Continued.															9				ne.	Mrs. Ida J. Milner.
ewnan oorcross. oint Peter oulan. uitman. amhurst. esaca. oome t. George t. Marys avannah tatesboro albotton. albotton.	Talbot	959 1,078 600 365 173 657 576 20 65 253 750 1,150	23 2 23 21 26 19 18 53 5 21 61 12 18 13	45. 6 55. 0 56. 1 45. 9 43. 0 56. 6 57. 8 54. 8 53. 7 50. 8	+ 2.7 + 2.0 + 5.1 + 3.9 + 2.2 + 1.2 + 4.9 + 3.4 + 4.7 + 4.2 + 1.3	70 71 81 79 68 69 83 82 78 79 76 70	4 7 3 3 5† 6 7 6 7 6 3 3† 3	25 25 29 22 27 29 33 26 25 20	28 20 20† 14 14† 20† 28 28 28 28 11†	30 41 39 33 38 44 38 24 31 32 39	3. 36 2. 38 3. 55 2. 15 4. 75 4. 15 4. 46 2. 59 2. 54 4. 13 4. 28 4. 43 4. 28	- 1.56 - 1.65 + 0.03 - 2.32 + 0.01 - 0.78 - 0.11 - 0.81 + 1.08 + 0.84 - 0.11 + 0.35	0.90 1.20 1.02 1.28 1.14 1.00 1.20 0.50 0.81 1.48 1.76 2.25 1.52	000000000000000000000000000000000000000	14 8 11 5 15 11 15 14 9 12 9 10 10		3 6 13 5 4 19 6 7 16	19 8	ne. ne. ne. ne. ne. ne. ne. ne. nw. ne. ne.	W. O. Medlock. C. M. Witcher. C. T. Merritt. A. B. Jones. D. E. Humphreys. D. A. Norton. W. M. Towers. A. N. Lund. David C. Sterling. U. S. Weather Bureau. W. C. Cromley. Dr. E. L. Bardwell. Frederick Ellison.
homasville	Thomas	1,050	30 26	55. 0 45. 6	+ 2.8 + 3.2	78 75 81	6 3	29 22 25	28 28 28	33 40 42	2.73	+ 0.70 - 2.48	2.70 1.00 1.00	0 0	111				n. n. w .	U. S. Weather Bureau. Mrs. Alice N. Starke Miss Apple Twitty
'aldosta 'alona. Vashington Vayeross Vayr'ssboro Vest Point Voodbury	Lowndes. McIntosh. Wilkes. Ware. Burke. Troup. Meriwether.	220 10 630 131 86 620 641	7 14 21 23 20 22 9	47. 4 55. 4	+ 3.3 + 4.6 + 1.2 + 2.4	72 82 79	6 7 6 3	25 26 26 21 24	251 28 25	32 41 41	1. 36 3. 32 1. 94	- 1. 29 - 0. 54 - 0. 68 + 0. 14 - 0. 46	1. 05 0. 76 0. 61 2. 15 1. 27 1. 52	0 0 0 0 0 0	3 14 12 6 14	8 11	3	15	n e. ne. n. nw.	Miss Annie Twitty. George E. Atwood. Miss Ella B. Smith. Thomas Sasser. Mrs. H. W. Blount. E. N. Dunn. E. T. Riggins.
Florida.																				
palachicola readia read	Alachua De Soto Polk Hernanado Frankiln Levy Lake Walton Volusia Lake Putnam Taylor Nassau Dade Polk Lee St. Lucie Alachua Walton Orange Nassau Dade Polk Lee Clay Baker Malton Orange Nassau Dade Palm Beach Citrus Duval Hamilton Bradford Monroe Osceola Columbia Polk Baker Madison Brevard Jackson Brevard Dade Clay Escambia Gadsden Wakulla Volusia Marion Volusia Orange Escambia Hillsboro Marion Washington St. Johns Pasco Monroe Onnoe Palm Manion Washington St. Johns Pasco Monroe Pinellas St. Johns Leon Hillsboro Pinellas Brevard	920 150 100 101 100 100 105 193 277 100 100 125 120 100 125 120 176 622 175 69 121 100 125 120 120 120 120 120 120 120 120 120 120	233 199 144 115 201 223 400 111 118 216 121 214 111 112 27 127 128 129 129 120 121 121 121 121 121 121 121 121 121	67. 6 65. 6 65. 6 65. 6 65. 6 65. 6 65. 6 65. 6 62. 8 8 559. 3 73. 3 3 68. 0 61. 6 6 55. 8 6 64. 6 65. 9 65. 6 62. 8 65. 6 64. 6 65. 9 65. 6 66. 6 62. 8 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 65. 2 66. 6 66. 6 62. 8 66. 6 62.	+ 6.2 + 5.4 + 4.6 + 1.4 + 6.1 + 4.0 + 4.0 + 4.0 + 4.0 + 4.0 + 5.7 + 5.6 + 5.7 + 4.5 + 4.5 + 4.5 + 4.5 + 5.7 + 4.5 + 4.5 + 5.7 + 4.6 + 4.6 + 5.7 + 5.6 + 5.7 + 5.7 + 5.6 + 5.7 + 5.6 + 5.7 + 5.7 + 5.6 + 5.7 + 5.6 + 5.7 +	85 85 85 81 76 88 86 88 85 88 85 88 85 88 85 88 85 88 85 88 85 86 88 85 86 88 85 86 88 85 86 88 86 88 86 86 86 86 86 86 86 86 86	3 6 18	40 311 325 377 399 299 293 33 322 244 435 445 299 244 251 503 344 251 503 344 251 503 344 251 503 344 251 503 344 251 503 344 503 345 347 347 347 347 347 347 347 347 347 347	288 288 200 200 200 288 200 200 200 200	36 33 31 225 33 37 36 39 300 27 24 41 42 24 24 24 25 35 29 41 40 13 37 37 37 36 38 38 36 68 38 35 68 38 35 68 38 35 68 35 36 36 36 36 36 36 36 36 36 36 36 36 36	1. 35 2. 2. 32 2. 2. 2. 00 4. 2. 3. 4. 1. 1. 1. 2. 2. 4. 3. 4. 1. 1. 2. 2. 4. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	- 0. 13 - 0. 07 - 0. 06 - 3. 30 - 0. 71 - 0. 69 + 0. 12 - 0. 69 + 0. 44 - 0. 42 - 1. 73 - 1. 46 - 1. 23 - 1. 14 - 0. 41 - 0. 34 - 0. 87 - 1. 46 - 0. 30 - 1. 44 - 0. 87 - 1. 46 - 0. 30 - 1. 43 - 0. 64 - 1. 29 - 1. 34 - 0. 87 - 1. 46 - 0. 30 - 1. 43 - 0. 87 - 1. 46 - 0. 30 - 1. 41 - 0. 41 - 0. 42 - 0. 80 - 1. 43 - 0. 80 - 1. 43 - 0. 80 - 1. 43 - 0. 80 - 1. 43 - 0. 80 - 1. 64 - 0. 80 - 1. 71 - 1. 65 - 0. 80 - 1. 71 - 1. 66 - 0. 80 - 1. 71 - 1. 66 - 0. 80 - 1. 71 - 1. 66 - 0. 80 - 1. 71 - 1. 66 - 1. 71 - 1. 71 - 1. 71 - 71 - 71 - 71 - 71 - 71 - 71 - 71 -	1. 29 0. 85 0. 60 0. 85 0. 60 0. 65 0. 78 1. 14 0. 29 0. 47 0. 65 0. 78 1. 86 0. 90 0. 62 0. 47 0. 65 0. 57 0. 65 0. 78 1. 14 0. 29 0. 62 0. 63 0. 63		4 4 4 4 7 9 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	15 23 14 18 10 117 122 166 100 222 166 99 31 33 8 66 6 88 18 18 11 11 11 11 11 11 11 11 11 11	19	1 4 9 3 3 100 166 22 22 133 3 100 8 8 5 5 5 2 2 14 13 3 2 11 2 5 6 6 15 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3	e. n. ne.	G. H. Whiteside. C. S. Bushnell. R. B. Hodgson. William King. William King. William King. William Mood. C. C. Peck. J. J. Blomquist. J. B. Lutterloh. S. S. Fesler. R. W. Storrs. A. C. Haynes. C. T. Smith. E. S. Hubbard. J. Wigglesworth. W. B. C. Duryee. William M. Heine. G. L. Brodrick. Miss M. M. Gardner. T. C. Nicholson. John Schnabel. U. S. Forest Service. J. B. A. Tibbits. J. A. Kahl. G. A. Angevine. W. H. Miller. U. S. Weather Bureau. Mrs. W. C. Caldwell. A. M. C. Brasch. U. S. Weather Bureau. J. A. Simpson. W. B. Knight. L. D. Niles. Griffing Bros. Co. E. J. Vann. J. F. Farley. W. J. Watson. F. Ulrich. U. S. Weather Bureau. G. A. Chalker. W. H. Trimmer. Miss Addie Grubb. Nathaniel Brewer. F. Nordman. J. C. Caldwell. J. D. Graham. J. D. Graham. James Thomson. U. S. Weather Bureau E. B. Trask. Dunellon Phosphate C. W. A. Emmons. E. F. Joyce. G. Schneider. U. S. Weather Bureau Satsuma Company. Mrs. W. C. Steele. W. H. Markham. I. S. Weather Bureau Satsuma Company. Mrs. W. C. Steele. W. H. Markham. J. F. Maybor. Curtis Jones.
Alabama. Alaga	. Calhoun	728	21	45.6	3 + 1.4 + 0.1	70	5 5 3	23	25	3 36 4 33 8 29	2.02 5.41 6.68	+ 0.87	0.90		0 1	5		6 1 8 1	7 nw.	

TABLE 1.—Climatological data for December, 1912. District No. 2—Continued.

			years.	Temp	perature	e, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	rainy or me	Number of clear days.		cloudy days.	wind n.	Observers.
Alabama—Continued.																				
ermuda	Conecuh		25		+ 1.7	73	51	26	201	37	6.83	+ 2.14	3.26	0	13	8	9	14	se.	M. J. Morris.
irmingham	Jefferson	. 701	24	45.9	- 1.4	70	3	25	28	30	5.80	+ 1.20	1.93	0	14	8	5	18	n.	U. S. Weather Bureau
aleraamp Hill	Shelby	. 500 738	11	49.6		74	3	20	11	38	7.01 2.88	+ 2.38 - 2.72	1.10	0	15	10	7	14	S.	Dr. Lyman Ward.
tronelle	Mobile	331	24		+ 1.0	75	4	30	10	31	7.47	+ 2.71	2.79	0	13	11	7	13	ne.	Rev. W. H. Rowe.
anton	Chilton	. 590	19	46.7	+ 0.9	75 74	3	30 24	28 28	35	7.11	+ 2.71 + 2.68	1.74	0	15					. Joseph B. Downs.
rdova		. 334	21	45.4	+ 2.0	73	3	20	28	36	6.98	+ 2.13	2.00	0	7	17	10	14	n.	Scott Maxwell.
ıllmanadeville			7	40.0		80	2	21	14	35	4.40 5.21		1.50	0	10 12	10	10	11	n.	Eugene A. Grayot. Dr. W. B. Fulton.
phne			21	54.8	+ 2.1	76	4	30	10	35		+ 0.91	1.50	0	12	11	4	16		John H. Young.
emopolis	Marengo		20								11.34	+ 6.58	3.78	0	15					. George E. Pegram.
othan	Houston	* *******		54.8h		74	31	31	21†		4.38		1.35	0	16					
faula		200 285	28 28	52.0	+0.6 + 2.7	72 74	5 5†	24 26	201	35 36	4.46 6.78	-0.16 + 2.95	2.10 1.62	0	15 12					Dr. J. B. Whitlock. George W. Salter.
ergreenomaton	Escambia		20	51.3	+ 0.2	72	3†	26	20†	39	3.68	- 1.12	1.86	0	9	14	3	14	n.	T. J. Farris.
rt Deposit	Lowndes	. 520	28	49.2	+ 1.6	75	3	30	10+	34	5, 45	+ 0.98	2.00	0	7		****			. J. F. Hattemer.
dsden	Etowah	. 621 . 826	28	45.6	+ 1.6 + 1.5	69	3	23	14	34	5.86	+ 0.86	1.00	0	14					
odwatereensboro			33	45.7	+1.5 -0.6	72 73	3	22 27	28 28	37 25	6.62 9.69	+ 2.43 + 4.86	1.24	T.	15 12					. Miss Daisy Buice. W. E. W. Yerby.
eenville	Butler	. 444	11	*****	0.0		0	41	20			+ 0.64	1.47	0	9					E. M. Lewis.
milton	Marion		16	44.8	+ 1.1	70	3	18	13†	37	9.72	+ 4.89	2.20	0	14	6	12	13	n.	Prof. H. O. Sargent.
aling Springs	Washington	. 362				****		*****	****		11.12		2.45	0	13		****	****		. J. E. Lipseomb.
ghland Home		160	20 28	51.4 46.6	+2.4 + 0.4	78 69	3 5	30 25	28 25†	29 32	7,00 8,61	+ 2.39 + 4.19	2.81	0	14	10	5	16	n.	Prof. Samuel Jordan. Robert L. King.
k No. 4	Talladega		15		+ 3.2	68	6	21	28	30		+ 1.64	1.30	0	14			****		U. S. Engineers.
ple Grove			19	41.6	- 0.3	71	6	22		35	5.90	+ 0.78	1.07	0	13	9	9	13	nw.	Mrs. A. L. Awbrey.
ntone			5	*****		****		*****			5.22	******	1.90	0	9					. E. Mason.
steadbile			9 40	53.6	1 9 1	20		28	90	99	5. 11	1 9 50	1.70	0	12 19		10	18		W. U. Wall. U. S. Weather Bureau
ntgomery	Montgomery		40	50.4	+ 2.1 + 1.3	70	3	35	28 28 28 14	22	8.16	$+3.59 \\ +1.83$	1.78	0	15	10	7	15	n. nw.	Do.
wbern			20	48.0	+ 1.0	75	3	24	28	28 31	8.97	+ 4.60	3.25	0	16	10	5	16	n.	Dr. J. Huggins.
eonto			18	44.4	+ 1.0 + 2.2	68	3	19	14	35	6.22	+ 1.29	1.52	0	15	11	0	20	W.	A. J. Ketchum.
elika			33	47.4	+ 1.0	70	3 5	28	28 28	25	5.46	+ 0.54	1.17	0	12		****	****		. A. H. Read, jr.
arkttville			10 12	49.2		74 75	3	27 24	201	26 35	4.55		2.00	0	7	10	4	17	nw.	James A. Scott.
shmataha			21		- 1.0	77	4	25	25	34	9.85	+ 5.10	3.82	0	14	3	7	21	SW.	Joseph B. Bell. W. N. Horn.
bertsdale	Baldwin	. 148		*****	******			*****			6.13		1.61	0	11			***		. Carl Boseck.
ma			32	FO 0	+ 1.7	77	3	25	28†	34	7.27	+ 2.71	1.40	0	15		2	****		Charles F. Brislin.
ring Hill ladega	Mobile	. 312 . 554	8		+ 2.0	72 71	5† 3	31 21	10† 28	32 31	7.04	+ 1.79	1.70	0	15	11	6	18	n. n.	Spring Hill College. W. E. Henkel.
lahassee	Elmore		22 21	20.0	7 2.0	**			40	or	4.92	- 0.23	1.38	0	15			1.8		P. A. Noble.
omasville	Clarke	. 385	21	50.0	+ 1.8	75	3	30	10†	30	5.31	+ 1.78	1.50	0	7		****			Miss H. T. Forster.
у	Pike	. 581	4	52.4		82	3	29	28	32	6.88		3.40	0	12	6	13	12	nw.	F. L. Zimmermann.
scaloosaskegee			31	51.4	-0.6 + 3.5	70 79	3	29 25 25 28 28	28† 20	31 36	6.54	+ 2.86 + 0.79	1.59	0	17	5	17	9	n.	W. S. Wyman, jr. Prof. George W. Carve
ion Springs		216	12 25 26	49.7	+ 2.4	75	3	28	28	28	6.69	+ 1.89	1.70	0	11					P. L. Cowan.
iontown	Perry	. 273	26	50.2	+ 1.4	75 75	4	28	20†	28 37	7.98	+ 3.63	2.65	0	9	8	5		e.	L H Moore.
ley Head	Dekalb		27	42.6	+ 1.3	63	21	19	14	34	5.35	+ 0.61	1.80	0	9	13	5	13		M. T. Floyd, M. D.
tumpka	Elmore	. 205	20	31.7	+ 4.4	80	3	26	28	37	5.15	+ 0.42	1.30	0	8	****	****	****		Mrs. Emmie Callaway
Mississippi.		-																		
erdeen ricultural College	Monroe Oktibbeha	. 210 424	24 22 19	44.2	+ 1.4	68	4† 3†	24	9†	35 32		+ 2.85 + 4.44	1.95	0	12 16	10	2 15	19 13	s. n.	L. D. Godfrey, jr. J. R. Ricks.
St. Louis	Hancock	. 28	19	53.7	-0.6 + 1.4	69	4	27 30	28	28		+ 2.54	1.81	0	19	10	4	17	nw.	Brother Stanislaus.
xi	Harrison	. 24	21	03.8	+ 1.7	70	3	33	28	23	6,47	+ 1.30	1.64	0	17				nw.	Miss M. Josie Pope.
neville			18		- 1.9	66	2†	21	13			+ 4.64		0	11	10	13	8	n.	Dr. D. T. Price.
ins	Covington	. 500	24	48.2 50.8	- 2.1	73 72	4 4	27 27	28† 25†		10.63 12.28	+ 5.62	2.09	0	16	9	3	19	e.	W. J. Bee. G. P. Sledge.
ımbia	Marion		8			144	*		201	02	15.14		4.50	0	15	9	1	21	nw.	N. R. Drummond.
ımbus	Lowndes	. 191	24	44.4	- 1.2	69	3†	24	28	37	6.57	+ 1.49	1.03	0	15	8	3	20	nw.	J. B. Love.
stal Springs	Copiah		20	47.4	-1.0	73	17	26	25†		13.48	+ 7.95	3.30	0	16	12	1	18		D. H. Miller.
nburg	Leake	248	7			72	4	23	28		8.54 10.38		1.20	0	14	11	3	17	n. ne.	J. Y. Blocker. J. B. Thompson.
ton	Itawamba		3		*******			*****			9.50	*******	2.10	T.	13	7	16	8	s.	A. D. Graham.
tiesburg	Forest	. 189	19								6.86	+ 2.34	1.26	0	11	7	1	23	n.	T. C. Spence.
lehurst	Copiah	. 460	22 2 25	48.0	- 0.6	74	17	28	28	39	11.08	+ 5.86	2.10	0	16	4	8	19	se.	J. D. Granberry.
kory	Newton	. 326	25	49 8	+ 2.3	74	17	26	28	24	8.99 11.79	+ 7.26	2.35	0	12 20	9	2	20	se.	T. N. McMullen. A. S. Nall.
e	Scott		24	46.7	+ 0.1	72		30	28	30	9.05	+ 4.67	2:00	0	16	10	3 3	18	ne.	Mrs. Eddie McNeel.
rel	Jones	. 241	8	50.3		74	3	25	28	35	12.55	*******	4.58	T.	16	10	3	18	ne.	Thomas W. Flynt.
kesville	Greene		18	51.4	+ 0.8	75		27 25 26 23	28 28 28 25†	34	10.77	+ 5.35	3.14	0	12					. Dr. Sam Pool.
isville Neill	Winston Pearl River	. 561	23	53 5	- 0.6	70 74	3 4	25	25†	32	7.63 9.68	+ 2.93	1.54	. 0	14	9	0	14	00	B. T. Webster. Prof. E. B. Ferris.
on	Noxubee	185	24	45.4	- 0.9	73	4	23	28	36		+ 3.36	1.60	. 0	15	12	2	14	se. w.	Finis E. Carleton.
molia	Pike	415	16	51.8	+ 1.3	72	4	28	28	30	14.01	+ 8.39	3.71	T.	16	12 7	8 8 3	16	e.	Finis E. Carleton. Miss Ruby V. Roberts
idian	Lauderdale	. 375	22 7		+ 0.9	73	3	26	28	29	8.46	+ 3.25	3.11	0	17	9	3	19	ne.	U. S. Weather Bureau
rill	George	. 76	5	50.9		73	A.	25	25†	36	9.84 13.48		2.06 4.25	0	15 19	10	1	20 16	n.	Otto C. Tompkins. Dr. G. A. Teunisson.
olona	Chickasaw	311	24		- 0.6	68	4	25	13			+ 6.18	2.95	0	11	7	8 5	15	e. n.	E. J. Henson.
cagoula	Jackson	. 15	3	53.7		71	7 4	25 34	19	24	6.75		2.57	0	10			***	м.	. McVey Young.
rlington	Hancock	. 10	24	53.6	+ 0.9	74	4	29	28	36	8.55	+ 4.10	1.70	0	11	5	6	20	ne.	Miss Annette Koch.
tervillebuta	Clarke	197	7	47.6		75	3	23	25†	33	8.93 9.98		2.12	0	14	11	6	14	se.	I. S. Rea.
pelo	Lee	278	13	45.2		67	5	23	13	30	9.98	+ 4.99	2.75 5.25	0	14 12	10	8 5	13 16	n. s.	George A. Floyd. W. S. Vincent.
ynesboro	Wayne	. 191	25		+ 1.4	79	5 3	25	28		12.02	+ 7.49	3.80	0		111	2	18	n.	R. S. Burke.
adland	Chickasaw	1	3							77	7.90		1.80	0	13	1		-		T. B. Ricks.

<sup>a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.</sup>

TABLE 2.—Daily precipitation for December, 1912. District No. 2, South Atlantic and east Gulf States.

															D	ay o	f mo	nth.								6							-
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Virginia.																															-		0.0
vonia	James		. 14		. 51	. 18	. 23			T.		. 08 T.			1.00.		1		. 06	. 13					. 50		Т.	. 09			. 62	. 24	2.9
chanan	Chowan		. 21	. 12	. 08	. 12				. 16					1			1	. 24	. 40			T.	. 16	. 68		. 03	. 82			. 04	. 49	5. 19
pe Henry	Coast		T.		. 12	3. 05	20		.01	. 03		. 02	***			***			. 19						. 30		. 53				1, 60		3.6
arlottesville	Roanoke					. 17	. 23					. 10			I a a a a				. 10					. 20				.27	****		1. 68	. 25	2. 1
rksville	Roanoke					. 45	. 20			. 10		T.			1	1	1	1	. 60					. 40			. 20			. 20	. 34		3.0
lumbia	Roanoke			. 15	. 65		T.		T.	T.				1	1	1			T.	. 28					. 56				. 10	0	T.		1.6
nville amond Springs	Coast					2, 30	. 20		. 30										. 06						. 51			. 15			. 56		. 2.9
y Bridge	James		T.		. 70				T.	. 20		90		1	1	1			. 10						. 70		. 10	90			. 15		1.
mpton ot Springs	James Chowan				. 50	. 30	1	1		1	1	1.	1						T						. 80	117	. 06		2	2			. 2.2
ог						. 80													. 05	. 75				. 45				. 25	· · ·	7 .68	. 78		3.8
ssiterxington	do		. 03																. 21	····								0 . 03	3		57	7	2.3
nchburg	do															1			.02	. 17				. 10	. 70)		. 76	6		. 13		6 2.8
ewport News	Coastdo		T.	. 02	.07	2. 42	2	2	.01	1 . 2	2	. 02							. 03				T.	. 36	. 2	3	. 0	1 . 02	8	T.	. 10		1.9
ndolph	Roanoke					. 57	7 .00	T.			מן יוף									. 19				.11	. 3	5	. T.	. 19	9				8 2.
chmond	James Roanoke		16	3	45	. 2	3 . 0.	T.	***		0 1.	T.							. 10						. 3	5	T.				- 4	2	1.6
oanokeoeky Mount	do		. 12	2	5	. 13	2 .3	4						: :::						1 . 4	0				5	0		4					. 2.
uckersville	James		. 24	1 .02			0 .2	4	T	T	.2	2							T.		1	1	T.	.24	1 .3	4	5	6			. 8	0 .4	43.
ottsville (near)	Coast	. T.	. 01	1 .0	4 . 4	0 .2	8 .0	2	. 0	1 . 1	0	11							2	1 .3	5		T.		5	7 0						8	
illiamsburg					8	. 5	0			. 1	9	. 13						****		1	1	1	1	1		1							
North Carolina.		1														1																	
	D. J.			4	0	1 5	1 0	2		0	7	o	3 .0	1					1	2 .2	1			1	7 .3	9			3				05 2. 05 4.
bemarle	Pedee		. 0	6 .2																5 .8	5			8 .4	0 1. 1	0	3.4					0 .3	30 6.
elhaven	Pungo																		2	8						2	1	1 .1	17		7		01 2.
rewers	PedeeSanteeSanteedo		1:20	3	3	1 .1	3 .2	8 .0	2			0	8						4					3		2						35	36 3.
nalybeate Springs.	Cape Fear.		0	4	0	3 .2	6 .0	2 T.		2	2	. 0	7					T	0	9			T	4	7 . ()1	(06 .0	18		1		10 1.
narlotte	Santee		0	4 T	. 2	5 . 4	0 .3	3 T.	.0	3 .0			-						0	6				0	0		2					50	32 2
nimney Rock urham (near)	Neuse Chowan Coast	i	7		4	6						0	4						17 .2	2 3	10		1										45 5.
agletown	Chowan		. T.		1	8 1. 3	3 .0	15 T.			T	0	0						T									00		** ***			1. 2.
dentonlizabeth City	Pasquotani			1	1	2	20			4	10								1														2
lizabethtown	Pasquotani Cape Fear.					!	19 .6	52						3	98			**		0	35			5	00				96 .	16			22 4 15 2
nfield (near) ayetteville	Cape Fear.			1	2	1. (07	12	1		20								!	. 0	12				00	98		24	30 .	20	1	70	10 2
lobe (near)	Santee Neuse		2	0			72							03						17	15					86			40 .	54	**		09 3
oldsboro	. Neuse Cape Fear.				12 1	. 1	15			03	20		9						:	11 .:	30			T		60				06		02 .	20 1 11 1
raham []					1	1	300							10						35	11		. 1.	1		92			33 .	43		01 .	10 2
reenville	Tar							01		00	30	** **				** * *				25 .	17			11 .	66 .	28 41		07	29				09 3 53 3
latteras						18 .	11													18	08	••••			42			10				22 .	.03 2
ings Mountain	Santee		1	331		10 *	400		10		20									10 .	14				45 .	71	!	1	63 .			15 .	25 2
instonincolnton	Cantaa			20		18 .	22													80	50				04	70	**		85 .	15		15 .	07 3
ouisburg	Tar Lumber				60		90 1				10	1		00	** **						14					12				. 25			. 08
fanteo	. Coast	** **	10		02			20 .1			42									74 ·	52				36	62		16	05			51	.00
farion	Santee		:	33 .	01 .	31 .	66 .	26			02		03				**	***		1.	20			** *	26 .	83		* 1.	10			*	. 11
fiddletown	. Coast				05		56	06			16	: :	03							- 1	21				200	63				. 08			. 12 T.
fonroe	Pedee			05 7		15 .	40				15	7		04					***	20	30				25	18		05 .	10				T.
lorganton	Pedee	:		15 .	01 .	85 .	10 .	43		**			06 .													43 .	64	.04	14 .			.01	.20
fount Airy	Santee						50 .	10			06 .								T		33			r. 7	F	90	04		85	. 27		T. .	
Nashville	Tar				05		52 .	06 .	05		28		**	05						09 .	25					74 .			. 78	. 23 .	***		. 26
Newbern	. Neuse			08	04				08	04 .	21			.04				***		25 .	39				35	90 .	***	22	20	. 01		. 46 .	
North Wilkesboro	Pedee			10		19 .	35													-				-	-			40			20	40	
(near).	Cane Fear			10		!	r	10 .	15					T						r. -				20 1.	00	70	***	. 40	61		. 10 .		
inehurst	. Lumber		01	10		28	10		05		16 .			. 03						10 .					40 .		1	.00 .				. 20	. 30
Pittsboro	Cape Fear Neuse			09		50	22	07	r		27		03 .						. 02	28	04 .			Т.	51	24 .		. 30	. 28	Т.	***	. 18	. 03
Raleigh	Cape Fear			10		10 .	. 00	. 01	02 .		10		08				***			10	40					. 48			. 90	T			. 30
Randleman	do				00		25	04		02 .			04							03	. 12 .			· ·	0.0	. 51 .		30	. 08		***	1.40	. 24
Reidsville	Savannah		1.	30 .		90	96 .		r.			T	02 .						. 15	43 .		***	T.	1.	. 00	.20	***	.70		T			. 10
Rockingham	Pedee			20 .		30	10 .	15		. 15 .	20					***					40	44.14				00		- 1	QR	02			. 201
Rocky Mount	Pedee				18		47	12																									. 19
Salisbury	Pedee					42	. 60 .				25						***	***		. 10	. 25					. 82		2	2.04			. 24	. 64
Scotland Neck	Pedee			17		30	. 32		01		. 30									. 50 .				T.	. 24	. 10		00	.30	****		. 11	. 33
Sloan	Cape Fear	r		06 .			.07			. 11 .			T.					****	. 20	. 09	. 15					. 75			. 50	. 34			.11
Smithfield	Neuse				10	20	. 04	. 02		***	. 15		T.								. 30			E .	PE			90	. 60	. 50	****	. 20	. 05
Southern Pines Southport	do			70	22		. 30	. 02	01		. 02									61	. 20			. 00	. 08	. 37		. 32	. 14			. 39	
Statesville	Pedee			. 16 .	00	. 15	. 25 .	01			T	40	01		****	***				. 10	. 20					. 92			. 88	. 29	****		. 05
Tarboro	Santee			46	. 02 .	60	. 30	. 25												. 20	99	***			. 52 T	.74	. 23 T		1. 13	06		. 05	. 18
Weldon	Roanoke				. 03 .	1	. 45	T. .		T.	. 17		. 03	. 04						. 30	. 18					1. 07			. 52			. 15	****
Willard	Cape Fea	r	T	. 10 .			T	T	T	.04	. 01		T.		****					. 50	. 01			. 14	. 82	. 26		. 10	. 17		***	T.	. 20
Wilmington																																	
South Carolina.																																	
Aiken	Edisto					. 20				1.00				. 20											1.00	2.00	. 40		. 50			30	. 10
Allendale	Savannal do Edisto Coast			.21		.11	.11	. 03					. 09							. 62	. 19		****		. 93	1. 48	****	.00	. 97				. 32
Batesburg					an		10	00	1																								· 2 40

Table 2.—Daily precipitation for December, 1912. District No. 2—Continued.

Stations.	Watershed.													1	-		of mo					1					1					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
outh Carolina—Con.																					,											
lackville[[Edisto		. 03			T.	. 03	. 03	. 07	. 04			. 10						. 03	. 13			T.	. 04	2. 01			. 50				. 10
Blairs	Broad Edisto			. 12			. 08																		. 75			, 30				1. 12
Bowman	Edisto Salkehatchie		. 23		T.	10	. 03	. 21	1.5									OB	0.5			1		2.03			. 09	. 47			10	1. 12
alhoun Falls	Savannah		****	. 03	1. 27	. 10			****		****		. 07		****		****		. 09	. 48	****			. 16	. 86	2.00	. 26	. 43			.07	. 34
amden	Wateree			****						. 04		****			****			****	. 08	. 25					1. 10			. 30	. 08			. 10
atawba	Catawba			. 09		. 24	. 45	. 02		. 10	. 04		. 02							. 10	****	****	****	****	. 80	****				****	***	
happells	Saluda Coast	.01	. 26			. 02	. 20	T.	****	****		T.	****		****	****		. 05	. 14		****	****	. 26	1.34	. 03		. 63			****		. 94
heraw	Pedee			. 08		. 03	.01		. 02	. 10			. 05		****				. 07	. 15					1.05				. 15		. 01	. 08
lemson College	Savannah		T.	T.	. 30	. 10		.05			T.	04	****					07	07				T	1.00	. 03		. 10				. 35	
onway []	Congaree Waccamaw .		1.	. 85	T.	T.	T.	T. T.	T.	T.	A.	.01						.01	. 30	. 25				T.	1.70		.01					T.
Parlington	Pedee					т.							07						T.						1.40			. 30			. 08	
disto]	Little Pedee. Edisto		. 12			T.	. 61	. 01	11	. 08		T.	. 04						T.	. 09			T.	. 86	2.00	****	T.	. 36		****	. 13	
ffingham	Lynches			. 85			. 50												T.						. 90							
erguson []	Santee			. 80			. 08												T.		. 09				1.80							
lorence	Pedee Broad		****	11	****	. 13	T.	. 10	19			04			****			****	49			****			. 51			. 42			T 12	. 09
reenville[]	Saluda			. 38		. 22	.74		T.	. 02		.09	. 03		****			****	. 40	. 48	****			T.	. 79							. 37
reenwood	do		****			T.	. 34				****									. 39					. 47			. 33				. 38
eath Springs	Wateree Black				T.	T.	. 16						. 00					. 15	. 20				****		2.00			30	. 20		. 15	05
iberty	Savannah		. 10	. 60	. 25	. 35		T.				. 04							. 30				T.	. 70			. 25	. 05			. 25	. 10
ittle Mountain	Saluda											. 18												. 25								
eriwether	Savannah		06		. 03		. 03	T.				. 10	04					, 06	00				01	1, 48	.78	****	. 40	41			. 05	
lonetta	Edisto Saluda		. 23		. 01	. 05	. 20	. 05		. 02		. 05							. 16					. 30	. 49		. 05	. 30			. 15	. 06
elzer	do		. 10	. 10	. 04	. 12	. 14			. 06									. 56	. 04				. 02	. 84			. 26			. 08	. 22
inopolis	Cooper Edisto	. 60		55			. 08	. 04											. 07	T.		****	. 06	2.00 Tr	2. 05		. 65	. 10	.30		T.	. 12
. Matthews	Santee								. 04	. 05									. 08	. 10	****				1.77		****	. 42	. 15			.09
duda	Saluda																		. 35					. 46	.70		. 42		****		. 11	. 11
ntuckniths Mills	Pedee		. 12		. 11	. 10	30	. 14		11		Т.	. 10 T						. 22				****	. 50	1.68		. 02		.23		. 20	.02
ciety Hill	do		. 95	.00		. 08	. 07	. 05	. 09				4.									****			1.00		.50		. 20		. 13	
partanburg	Broad		. 02	. 20		. 18						T.	****						.57	. 42					. 70			.08			. 05	
mmerville	Ashley Edisto		1.23		T.	.06 T.	. 24	.02		. 02							****	T.	. 12	. 04	****		.08	1.02	. 42		.08	.38				1.34
alterboro	Ashepoo		1.05			. 10	. 12	. 03											. 05	. 10				1.05	.50		. 11				.00	
innsboro	Broad						T.					. 50						T.	. 70					. 60			. 80					. 45
	Catawba		. 65 T.	. 54	. 10	. 10		. 12											. 20	10			T	. 35	1.30		04	. 20	.29		. 35	T.
stitussee []	Combance		4.	.01		. 02		. 14					1.					****		. 10	****	****	4.	1.	1. 00	****	.04	. 20	. 20	****		1.
Georgia.																																
bbeville]]	Ocmulgee	1				. 58	.04		. 34				.06	T	. 04								. 05	36	1.03			.54	. 02			. 18
dairsville	Coosa		. 40	. 03	. 45	. 70	T.				T.	T.												1.50				T.			T.	. 50
bany	Flint					. 08	T.	. 01	. 05				T.	T.						. 02				. 25	. 60			. 61			. 02	. 31
hens	Allapaha		. 11		.06	. 02		. 09		T			08		. 05	. 42	. 07		. 45	. 05			. 20	. 13	. 90		. 02	. 23			.20	. 36
tlanta	Chat'ho'chee	T.	. 11	. 01	. 68	. 25	. 08				T.	. 15						. 11	. 14			T.	. 03	. 83	.01			. 04	.28		. 40	T.
igusta	Savannah Flint			. 01		.01		. 07				. 09							. 02					1.77	. 04		. 05	. 34			. 06	
ainbridge	do		T.			. 04		. 25					11	. 06	. 17	. 58	. 00			23			. 11		. 06			. 62				. 60
mak	Savannah		T.		T.		.30																T.		1.70			. 40			. 54	
nton	Coosa			. 17	. 15	. 34	. 41			T.		T.	. 14						. 73						1.04							
ayton	Savannah				*	. 17	. 14	. 10	. 06											. 05			T.	. 91	. 85		T.				. 09	
olumbus	Chat'ho'chee					. 95	. 07		. 15				. 15	T.					. 05				. 10	. 46	1.98						. 25	. 04
oncord	Flint			. 30		. 04	. 12					. 05											. 15	1.72							.74	
ovington ahlonega	Ocmulgee Chat'ho'chee		91		. 20	. 30	. 40	. 20	. 10	04		. 03						T.	. 30						1.05			91	. 35			. 15
		T.	. 81	. 02	. 22	1. 10	. 21	. 01										. 49	. 36			T.	Т.	. 14	T.			.22			.91	
ublin	Oconee					. 39	. 07		. 19				. 04	T.						. 04			. 04	. 31	3.24							. 12
astman	Oconee Oconee			02	15	. 22	.01	.01						T.	T.				. 24				07	1 40	96		1	40		1	.36	
berton	Savannah		. 18	. 02	. 15	.04		.05				. 16	03						20					70	15		121	. 20		. 42		
xperiment	Savannah Ocmulgee Chat'ho'chee				. 61		.38			. 12		. 12							.06				. 14	. 97	. 16			. 34			. 14	. 36
ort Gaines	Ocmulgee Chat'ho'chee do			20	13	1.00	95	. 10	. 20	05			. 10						T.					.70	1.20			25	****	****	. 10	. 15
llsville	Savannah		. 20	. 18	. 13	. 18				. 00														. 05	1. 12			. 12			. 41	
ennville	Savannah Altamaha Coosa Ogeechee Oconee		. 19		. 05	T.	. 13							T.		T.		. 03	. 07				. 35	. 47			. 81	.06			. 56	2.90
ran ite Hill	Orgoophoo	T.	. 19	. 01	01	1. 37	. 03	T.		. 11	T.	. 12						. 49	. 33				.01	. 83	. 18			. 18			. 63	91
reensboro	Oconee		.04	.01	.04	. 14	.38	. 04				. 10	****						. 12	. 43				.04	1. 16		.35	. 10			.24	.28
iffin 1	Ocmulgee				. 11	. 24	. 55	.08	. 09				. 22						. 18				. 15	. 18	1. 19			* Table	****		× 4.0	. 40
arrison	Ogeechee					EE		.28	11				12							04				3.00	1 84		. 72	49			. 12	. 48
sbon	Ocmulgee Ocmulgee Savannah		.06		.38	. 20	. 08	. 13				. 05	. 10	.00					. 35	.04			.00	. 58	1.09			.33			. 22	
st Mountain	Chat'ho'chee		. 10		. 60		. 45						. 22									. 05		1.23					. 40		****	
misville	Ocmulace			. 05	. 09	04	. 01	. 19					. 09				02			01			. 08	2.48	75			. 55				. 45
con	Ocmulgee				.11	.07	.03	. 08	.02			. 10				.02	. 03		.71	.01			.08	1.98	. 40	****		. 46			.09	. 20
arshallville []	Ogeechee Ocmulgee Ocmulgee Flint Oconee Ogeechee Flint Oconee		T.	T.	. 05	. 27	. 30		. 20				. 10	T.					1.10				.11	2.00	. 97			. 62			. 20	T.
illedgeville [[Oconee		T.	. 05	T.	.05	. 02	.02	. 10				.12							. 38			. 07	. 22	1.90			. 53			. 04	. 07
ontezuma	Flint.				.05	21	.06	T	.20					T	.01				T	64			.05	45	2. 10			. 40	****		.03	. 15
PARTITION	Comment Popular	0000	0000	+ 17 W	· (AC)	1 MILE	. 00	9 9 9 9	0000	. 20	0000	0000	1.00		000	0000	0000	0000	. 00			0000	+ 3.00	1.468	A . W. E		9000				. 13	. 06
wnan II	Chat'ho'chee							. 36	. 10										.75				. 10	. 34	. 90			. 39			. 30	. 01
orcross	Savannah		05	. 14	. 12	. 30	. 36	. 10	.06			. 04	. 08						.20	. 02				. 18	1.02		****	. 34			. 40	
	Savannah Suwanee																															
itman	do								. 16						. 16		. 51	T.						. 18								1.14
mhurst	Coosa		. 35	. 05	. 46	1.00	. 10			. 10		. 14	783					. 45	. 35				.06	. 65	.16			. 20			. 65	
me II.	do	. 08	. 18	25	. 60	28	25		. 10	10		.05	19					1.20	60	T			. 07	.84	1.05	. 18			. 62	T.	50	
ulian	St. Marys	.36	. 08			. 00	. 20	. 14	. 12						. 50	. 08		. 03	.30					. 04		. 12	. 32	. 10		.0	. 00	. 35
	do		. 81					. 02	. 05					. 03		.68			13					T			99	97			T	19
Marys		000	. 0-0		1	190		0.00								FW			1 20	****				1.	****	****	. 30	. 01			- A.	* 14

TABLE 2.—Daily precipitation for December, 1912. District No. 2—Continued.

															D	ay o	f mo	nth.														
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Georgia—Contd.			-	-						1																					20	10
lbotton	Chat'ho'chee				. 35	. 20	95	.1815 .31				. 12	04					***	.07 .	***			. 16	2. 25	1.52	****		. 16			.60	
llapoosa omasville	Tallapoosa Ocklocknee.		T.		.01	.03	.05	.31	.06				.01	. 10	.14	. 66		T.	.03				. 08	T.				. 61		T.	.02	2.70
ecoa II	Savannah		. LO	. 10	. 23	. 13	. 40						.05 .					m	.30 .													
Idosta II	Suwanee Coast	07	. 15	T.		T.			. 15	T.					. 25	. 00	. 20	1.						1.				.00	1.05			
ashington	Savannah		. 76	. 10	.04	10	49	07	08			1							. 06	. 36			. 43	. 18	. 12						. 22	. 38
ayeross	Satilla		. 22	. 15		T.	70		05				07		. 03	. 61	. 08		. 05	.05			T.	. 18	2.15		. 13	. 54				. 06
	Burke Chat'ho'chee			.03	T.	57	45	.16	. 11	.01		****	. 18						.34 .				.24	. 45	1.27			. 48			. 23	. 02
	Flint					. 23	.31	T.	. 11				. 19						. 10	. 05				. 54	1.52			. 49				. 21
Florida.							Ì				-																					
	Coast Peace Creek.						- 1	- 1	- 1	- 5		1	- 1			701	1		. 25	.10								.10				2.45
cadia	Waccasassa . Kissimmee Peace Creek .															. 85			. 35 .					. 15				. 13				
on Park	Kissimmee		.09	.10												.11		.02	. 20	05					. 10			. 12	.08			.02
rtow	Peace Creek.		67	.45							. 02			****	.06	. 90	. 00		.24	.00					.00		.20					
rrabelle	Withl'c'chee Coast								. 50						1.05	. 50												. 75				
dar Keys	do		.72			£							m		. 08	. 67			.28									. 12				1.30
Funiak Spgs .	Ch't'h'chee . St. Johns		T.	1.	1.		. 30	.04					1.		. 005				L. USL.								0000	. 44	0000		0000	0000
	Lake	. 19		.10						1		- 1			00	0.2	1 19		EMS	- 1	- 1				682							
deral Point	St. Johns															1.10	. 02	.01	. 16	. 05	.01					0000		. 10				
	Fenholloway Coast	.02	1.35	T	.04	T	T		.02	.05				T.	. 05	. 82	. 02	.06	T.	. 12	.02	T.		- 0.4			465	258	41 . 196	b		Lawre .
ort Lauderdale . .	do	.01	1.35 .20 .62						. 03		. 28	. 50	. 01	T.		T.	. 15		. 14	. 02				.15	770	****				. 07	.01	.06
rt Meade	Peace Creek. Calo's'h'chee																															
ort Myers	Calo's'n'chee	. 20	.60							. 10							.50	.10	. 10				.10					. 20)			
inesville	Lake		1.00	. 05					. 02						. 05	. 95	.06			. 30					. 06			. 10	.10		.03	. 30
arniers (near)	Calo's'h'chee Indian Lake Coast Lake Nassau		40		. 13	. 09				04				. 24	. 30	1 30			40				T.	. 10	****			.04			. 10	
rasmere	Nassan		. 85							.04				T.	T.	. 60			. 30									. 30				. 20
omestead	Coast	. 60										. 14					.04						. 02			11	1 1 79					. 02
	Lake	. 28	3.63								. 88	. 22		22		1.65	. 04	. 30	.10						.00							. 62
	St. Johns	T.	1.05	.01			T.	T.	. 05	T.				. 04	.06	. 68		. 01	. 28				T.	T.	. 08							.38
sper	Suwanee								. 50	. 15				. 05					90													.53
	Coast	20	- 43	14		T		T					• • • •	. 14	.78	1.14		. 22	.00	T.			.17					.00	3			
ey West	Kissimmee		10		1					ALC:		-			1	283	44		T.									. 19	0 T.		(TD	P.
ake City	Suwanee		. 51							10				1100	120	1 . 152		T.	. 38	T.			****	T.	10			.00	8		A.	
	Peace Creek. St. Marys									.03				. 18	. 10	. 63			92						2	1	1	35	8			. 11
adison	St. Marys Suwanee Indian Apalachicola Indian Coast		. 03	.01		T.	. 23	. 03		. 38					. 24	. 57	.06	.02	.02	T.				.06	T.			- 41	1 .03	3	00	.03
alabar	Indian		. 46	. 40		m	26		20	. 02				T.	15	.10	.12	.03	.02	.21		. 22		. 26	.11			.90	0		01	
arianna erritts Island	Indian	. 08	. 20	.01	T.		. 20		. 20	T.		T.		T.		1.86		.09					.11		- 01	.3	5 .00	.07	7			T.
iami	Coast	.17									T.	.07			.12	. 59	.02	.90	17				. 03		05			20			1.	.07
iddieburg	St. Johns		. 26				***			.00			0000			0 - 0 -	1.00			. 00				1.48				1.40	0		44	4
olinoount Pleasant	A malaahiaala		1				no	17	. 45	T				10	N.	65			. 03				. 201	1.				. 70	0		03	3 1.80 2.70
e v port	St. Marks Coast		- 04	.02			.11		. 25					. 21	0.5	. 72	10	05	. 20	17	****		T.	****		T	.04	. 04	. 0	8	. 17	1
	St. Johns		.60						.00	* * * * *					. 10	. 43	T.		. 05	T.					.06		10					1
	do															. 48			. 18					TD.	- TE							
	do	T.	. 42	FF	14	19	70			T.		T	01	25	12	- 34	T.	T	T.	. 15	• • • •	T.	. 20	.71	T.		39	8	5		. 20	.07
ensacola	Coast Hillsboro	1.	.12	1.	. 1.4	. 14		.00																								
ockwell	Withl'e'chee		60											- 30					1.10	.00			0.00	.07					1.10			4 .90
t. Andrew	Coast		1 70			. 56	.04	. 15	. 12		.09			. 36	1.37	.90			. 40	.50								. 10				
t. Augustine t. Leo	Withl'c'chee		.20							. 03						. 25			. 30	. 05		****			.0	1						
and Key	Coast																		21			1			0	4 7		1.10	0	Т.		. 26
	St. Johns	. 60	9 . 32											. 00		.70			. 15					.00				. 1	5		0/	
allahassee	Ocklocknee						T.	T.	. 15	T.				. 0	5 1. 0		.10	. 05		. 10			. 05	.08	- 00	3		1.0	0		T.	
ampa	Coast	. 10	T.							T.						24	T.		. 70					1.	.0.			. 0	10			T
arpon Springs	Indian Ch't'h'chee.	.0	8 .14	. 01						. 09	. 02				.09	.46	.04	.08	.11				. 02	.01	1			. 0	3			1 0
ausau	Ch't'h'chee.				T.	T.													. 80			.00	.00		- 19	9				-		1.90
Alabama.																																
laga II	Chatta'chee Coosa				T.	.10	.01							T.	. 02	T.			.04	T.		di.	T.	.32	. 4	5	1	. 1	6			2 .90 0 T.
nniston	Coosa	0	6 .44	T.	1.14	. 35	.00	. 44	08		T	. 28						. 47	.01			T.		1.10				5	0			
shvilleuburn	Tallapage		- 31	T.	1.07	3. 03	0.0	27	01	T. 00		. 19						1 1.	. 60				16	2 2 04	R 9/	a	17	5	187		3	9 .00
enton II	Alabama				2.02	. 45	. 14	. 54		. 09												T.	. 92	T.	.8	2		. 6	2	1	5 T.	5 .13
ermuda	Facambia	n	9 0	3	11 55	0.7	16	1 . 102			1	. 28		.0	9			T.	T.			T.	21	0.2	2		. 2	0 .1	7	1	0 .3	1 T.
irmingham	Bl'k Warr'r Coosa																						.10	0 .50	8.	5		4	8		4	8
alera []amp Hill	Tallanges			1	1.30	.37	7	39			. 20								. 21				4	3.3	2			1 0	13		7	0
tronelle	Alabama Coosa Bl'k Warr'r	0	5 .0	2 .0	. 28	1.0	. 50					. 25	20	. 1	9			- 07				1	9.4	n n	019 72	1.0	1	1 5	587	1		n
lanton ordova	Bl'k Warr'r	0	0 . 1	2 . 2	1.20	2.00		. 40	.04	.00		. 53	. 20	1				. 35					1.00	0						1.0	10	
ullman				4 .10	1.50	. 40	. 10	T.	. 18									. 70				T.	.0	5 . 5	0 .3	6						0
ullman	Tallapoosa . Coast				74	.8	. 2	. 22	.11	T.		10	. 21	***	0 7	T		01	. 25 T		****		1.1	51.2	5 T	0		1.7	50	** ***		5
Paphne	Coast	. T.	. 0.	8 9	21 06	2 1 24	2 2 1	2 30	N OF	5	1	1 . 0.5	. 50					Aces -	. 20				. 1	8 .4	5 1:3	2			55		5	0
othan	04	1	0	7 0	11 00	> °N	N 04	0.5	11 11	2	1	1	1	. 0	KB	. 4	28		. 50	61 . 416	3			. *	1.3	5		8	44		1	8 1
Oothan																				.04			1	61.0	01.6	2		1 .	51	** ***	3	7
vergreen	Escambia		T	0	8 .36	3 .00	3 3	2 .19					T	1.0	8 T			T.	. 10				T	.4	2			. 1.8	86		3	8 T.
ort Donosit III	do				40)	2	01.10	. 2				T.	T					T.					9	0 2.0				24		8	0
OLU L'EDUSIE BELLE	Coorn	1	1.1	2 .4	0 .60	9 . 9	81.0	0	. 04	1 .13	2	. 04	. 24						. 24					1	0 . 8	0		1 05	A8		0	5
ufaula vergreen lomaton ort Deposit adsden oodwater reensboro reenville	C008a		-	- 0	0 01	1 0	7 0	5 90	1 10	2 0	3	04	9.	4	1	1			. 84		.1.		. 1	9 .4	11.2	14			51			MALE N. P. L.

Table 2.—Daily precipitation for December, 1912. District No. 2—Continued.

	Watanhad														1	Day	of mo	onth.															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Alabama—Contd.																																	
amilton	Tombigbee							. 04	. 20	. 02	T.	. 22						. 56	T.				. 10	1.10	.97		T.	. 28			. 70		9.
ealing Springs	Escambia		. 10	2.45	. 63	1.55	.82	.03				20	. 55			****			. 33				. 50	1.08	1.67		. 66		. 75		****	T.	
ighland Home	Tombigbee	****	****		1.95	2 16	.08	10		****	****	36	45	.03	****	****		.01	20		****	****	. 10	2. 01	1 55		. 33		****		. 36	. 06	
ock No. 4	Coosa	40	10	1 10	05	3. 10	.40	10	10	****	****	35	. 40			****	****	50	10	****		****	10	1 30	1.00	****	****	. 30	****		50		
aple Grove	Coosa	0.5	- 10	47	. 99	1 07	. 40	- 10	10		75	91	****		****			. 00	. 10		****		. 10	1.00		****	00	. 04		. 65	T.	****	
entone	do	.00	T	90	5.4	76	1 00	.00	. 10		1.	. 41						.00	69				. 20	97	61		. 20	94		.00	1.		
Istend	Tallapoosa		1.	70	47	.80	.32	.20	10				90						19				10	20	1 70	50		. 24			40		
Istena	Coast	04	07	1.	1 00	47	1.70	. 07	. 10			17	. 20	10				06	. 12			04	200	1 40	1.70	. 30	1 05	10			.54	.04	
obileontgomery	Alabama	.04	204	00	1. 20	.02	.17	.06	783			200	.02	T.	.07	.01		.00	00			.09	. 20	0.08	00		1.33	. 10			49	T.	
ewbern	Alabama Bl'k Warr'r.	.01	A.	.02	2 98	.02	.35	.00	00			1.60		1.				.00	. 02			0.4	. 11	2.00	.02		. 14	. 90		40	.43 T.	.02	
eonto	do	. 10	. 20	. 30	0.20	1 50	.06	.06	.00	90		95						. 42	OF			70.	.00	. 90	11		- 91			. 48	.88	. 02	
elika	Tallapoosa		. 00	. 20	66	1.00	.32	.12	19	T	.00	. 00	91					. 00	44			4.	17	57	1. 17			50			. 34		
ark	Coast				.00	2 00	.30	95	. 25				. 01	T					. 23				db.	1 00				45			.20		
shmataha	Tombighoo	19	19		2 99	79	25	.35	. 20	10		74	04					91		0000		rgo I	50	1 03				81			. 52		
bertsdale	Coast.	. 12	00		80	34	1 04	21	01	. 10		05	97	03	00	****		. 61		****	***		200	29				1 61		****	. 44	.04	
mall	Tombigbee Coast Alabama	****	19	00	88	1 26	47	34	07	04	****	.00	40	.00	.400		****	****	47		****	****	19	54	1 40	****		69			45	. 09	
ringhill	Coast		05	-06	50	02	50	1.70	07	.04			26	02		01							04	1 15	61			1 59			50		
lladega	Coosa	30	30		1.10	65	.00	.72	.01				31	.02		.01		38				T	T	1 43	.01			1.00			.90		
llassee	Tallanones			0.9	40	79							99	7 7	0.7				141												22	01	il.
omasville]	Tallapoosa Tombigbee			.04	1 30	. 14		1 45	. 00			69	. 40	0.4	.01				. 10				. Ac	18	1.00			1 50			90	.01	1
OV	Fecambia.		T		1 30	90	003	06	****	****		44	T	05	****	***	****	T	05		****		19	2 40		****	****	5.00			47	10	d
scaloosa	Bl'k Warr'r		40	22	1 00	1 50	1 18	45	16	15		.00	22	.00				02	21				. 12	98	90			45			45	. 10	1
skegee	Tombigbee Escambia Bl'k Warr'r. Tallapoosa do		. 90		1 10	69	T. 10	26	. 10	- 10		. 00	. 203				45	. 02	. 21				.00	1 60	25			. 40		100	. 20		1
ion Springs	do.				80	85	30	10					21	T			. 40		61				. 99	70	1 70			60		. 00	47	49	a
iontown	Dille Wore's	30			9.65	. 00	. 30	. 10				00	.31	L.				40	.01					1 60	1. 70			.02			. 97	. 90	
low Hood	Cooco	. 10	10		2, 00	1 00		. 90			T	.90					0000	49	11				70	1.00				.00			. 02		4
lley Head	Bl'k Warr'r. Coosado		. 15		. 30	1.80					1.	. 00						. 95	. 11				1.	. 02	1 00			. 90			.80		-
					. 10	. 02		. 21											****			****	. 02	. 00	1.30			. 30			. 32		-
Mississippi.																														1			-
berdeen	Tombigbee		1.40		.85		1.54			. 18		. 15												.94	. 69			. 33			.73		.1
ricultural College	do	. 25	. 75	.02	1.35	2.40			. 25		. 02	00	.02					.40				. 15	. 40	1.25				.30		. 20	.60		
y St. Louis	Coast	.02	. 20		.14	,90	1.40	. 43	.01			.03	.41	. 22	.04	****		. 10	.01				. 43	1.06			. 03	1.78			. 46	. 03	3
oxi	Tombigbee	*	. 18		. 19	. 41	. 66	.98				.02	. 27	. 20	.02			. 05	.02				. 32	1.22				1, 49			. 43		
oneville	Tombigbee	.05	2.45	T.	.90	2.32			. 02		T.	. 32						. 58						2.24				. 13		. 12	.60		
ookhaven	Pearl Leaf		. 10		1.92	1.83	. 26	.70		.02		.02	.70	.06				. 25	. 05				1.13	1.15	. 88			.74			.82		J
lins	Leaf	. 13			4.99	1.79	.36	. 25				72	.02	. 00								. 13	.61	2.10				. 55					.1
umbia	Pearl	T.	. 18	.07	4.50	1.93	. 58	.90	. 10				1.10	.22	T.				. 18				.85	1.60	1.22			1. 18			. 56		4
umbus	Tombigbee		.90	T.	.90	.05	1.03	.04		. 20		.18	. 36	. 22				.32	.04			T.	. 14	. 52	.77			. 29			. 83		
stal Springs	Pearl		. 45		2.35	3.30	. 11	1.20	. 03	.07		.08	1.18	. 03				.30					. 197	. 90	11.15			. 55			.81		
inburg	do		.70	1.20		. 40	.76	. 29		. 15		. 56	.44					. 30					.86	.80	.77			. 53	3				
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ton	Tombigbee Leaf			1.45	2.10	1.98		.02	. 22	T.		.32						. 65					. 05	1.53	. 03			.30)	. 17	. 68		
tiesburg	Leaf		T.		1.18	. 28	.92	. 64	T.	T.		T.	.84	. 10					T.				. 18	. 38	1.26			. 92	2		. 16		
lehurst	Pearl		. 11	1.95		2.10	. 20	. 55		. 10		.04	.79	.07				. 30	.04				.91	1, 17	11.02		1	. 70)		1.03		
kory	Chickasaw'y.	. 20	.30		2.35	1.80	. 12	.05				1.05						. 30				. 11	. 68	1.55									
kson	Pearl	. 03	1.05	.35	1.31	1.99	.08	1.28	. 18	.04	. 06	.71		. 02				. 40				. 32	1.00	1.62			. 20	.37		. 3!			
cell	do		. 60	. 05	2.00	.75	.87	. 18		. 18		. 12	. 62					. 20	. 08				.70	. 65	. 85			. 50)		.70		
rel	Leaf Chickasaw'y.	. 15	.04	T.	4.58	1. 10	1.55	. 20	T.	T.		.70	. 03	. 12				. 15				. 06	80	9 10	A CIP		0.5	62.4	l	183	80	T.	1
kesville	Chickasaw'y.		. 50			1.95	1, 26	.72					.35	.09					.37				. 50	3.14	. 06			1.04			79		
isville	Pearl		.94		1.06	1.54		. 17	.08	. 10		.77						. 23				. 14	. 31	11, 25	Manne			. 24		. 14	. 66		
Veill	do	.04	. 12	T.	. 67	1.43	1.05						T.	.30				. 27					. 58	3, 22			. 10	. 83	1	. 05	.74	. 04	
on	Tombigbee	1	1.25	.06	1.60	. 13	1.08	. 24										. 15				T.	25	. 60	.78		1	10)				
nolia	Pearl	. 35	.04	3.71	.01	1, 20	.83	. 21		. 03		1, 20	. 25						.01			1.05		3, 10)	1	91			90			j
idian	Chickasaw'v.	. 51	.36	.86	2.28	.90	. 15	.06	.06		T	1.20	T	T				13	. 04			.30	28	1. 27			35	.05				****	1
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nticello	Pearl	35	09	T	4 25	2 40	69	33	7	T		. 65	04	. 10	01			. 25	. 44			. 20	76	2.00	1.00		05	54		02		.01	il
olonal	Tombigbee	.00	1 45		2. 10	2 05	.30	.00		. 23		.30	.08	. 10				. 45	****			. 20	.10	70	90		.00	94	****	1 . 04	000	.01	
cagoula	Coast		000		2. 10	40	9.57	T.				95						.08					*	1 40	.00			1 00					
rlington	Coast	93	.00		69	1 20	1 97	0.					97					. 10					**	1.40			700	1.09			. 55		
arlington	Pearl	1.	- 17		.85	1.32	1.20	. 65					.37	. 26	I.								. 58	1.30		1	T.	1.70)	T.	****	T.	-
terville	Tombigbee	. 40	.71		2. 12	1.44	. 04	. 38	. 13		T.	.79	T.									. 35	. 02	1.42				- 50			. 42		4
ubuta	Chickasaw'y.				2. 12 2. 75 1. 95	. 70	1.00	. 51		. 02		. 25	. 66												1. 24						. 60		
pelo	Tombigbee	. 02	1.52		1.95	3.30			. 21		T.	. 25						. 40						1.53	. 04			. 13		29	.41		- 1
ynesboro	Chickasaw'y.	T.	T.	. 15	3.80	.70	1.10	.77	T.				. 75	T.								.30	. 75	. 98	11.56		. 78				. 68		. []
odland	Tombigbee				1.80				. 20																						. 45		

* Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

¶ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures at selected stations for December, 1912. District No. 2, South Atlantic and east Gulf States.

8					Virg	inia.												No	orth Ca	rolina	à.							
Date.	Calla	ville.	Spri	ot ings.	Lyi		Nor	folk.	Richr	nond.	Char	lotte.	Eden	ton.	Faye		Hatte	eras.	New §		Rale	igh.	Rei		Sali		Wilm	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.																				
1 2 3 4 5	57 67 63 57 60	28 33 44 32 53	60 57 58 57 64	40 24 30 32 47	55 52 52 50 55	30 36 36 34 49	56 68 64 63 70	42 46 45 40 52	55 67 55 53 56	32 37 40 37 50	55 58 62 65 67	39 46 47 47 47 57	57 65 63 65 74	44 36 50 37 57	59 69 65 70 72	36 37 50 50 64	61 71 64 69 74	45 61 49 47 66	64 71 73 72 72	32 39 51 40 52	54 68 56 64 71	39 44 46 43 64	55 61 52 51 57	35 41 41 38 49	50 60 60 64 72	32 35 37 40 53	65 70 68 69 72	4 5 5 5 6
6 7 8 9	77 65 56 51 52	56 48 42 27 24	60 63 55 43 47	15 52 31 15 18	73 58 49 45 50	51 48 38 28 28	74 64 56 50 51	64 48 47 27 29	74 58 55 46 51	54 45 44 24 26	73 65 62 43 51	62 57 42 34 29	75 70 61 53 50	60 55 50 30 45	77 67 70 59 55	65 61 54 33 24	75 65 65 56 59	64 55 56 33 32	76 66 71 52 68	57 57 48 31 20	73 65 62 44 52	64 55 44 31 30	74 65 58 50 52	55 57 43 30 25	70 74 65 56 52	53 55 45 34 25	75 70 73 55 58	6 5 3 3
1 2 3 4 5	50 46 40 57 57	42 29 14 23 20	46 40 32 46 53	32 12. 8 21 18	46 43 41 56 63	43 26 20 28 23	51 46 42 53 58	45 30 27 30 32	49 44 39 50 57	43 26 17 26 28	48 44 41 49 58	41 29 24 26 30	60 50 42 49 53	40 33 22 24 24	56 50 42 56 60	46 31 20 23 25	63 51 46 50 55	50 35 34 37 41	65 52 40 58 62	39 36 19 17 24	48 45 39 54 57	45 28 23 27 32	49 45 43 59 62	39 27 19 26 30	57 54 44 53 52	42 31 18 21 20	65 52 44 57 57	4 3 2 2 3
3 7 3 9	60 64 61 61 55	33 25 48 34 20	50 52 52 53 49	33 28 41 21 19	58 59 56 55 51	35 27 47 31 28	58 66 68 62 54	40 41 - 57 35 32	58 62 62 54 52	40 32 52 31 28	61 61 58 52 54	39 40 52 34 29	60 67 67 64 57	33 30 53 40 27	63 73 70 65 59	35 28 53 40 34	57 69 69 66 55	46 48 60 45 42	73 72 68 57 62	28 27 46 43 26	59 65 65 55 54	42 35 52 34 30	61 61 61 58 55	35 32 51 33 25	62 61 62 61 57	22 29 39 35 25	63 73 68 61 58	
1 2 3 4 5	56 45 40 41 49	26 27 23 25 20	42 39 34 34 40	29 16 15 22 9	52 37 38 42 49	31 30 25 28 24	56 42 41 45 49	40 34 33 33 31	55 36 39 38 47	36 29 26 30 24	57 43 36 44 51	36 34 31 29 29	57 46 42 40 48	34 35 32 32 25	61 46 40 47 54	29 38 33 32 26	58 49 59 55 50	45 44 43 38 36	66 44 45 62 51	31 33 29 31 21	57 44 38 44 49	39 34 30 32 29	56 44 34 42 55	29 29 26 29 26	57 59 57 48 54	30 32 26 30 25	62 45 41 47 53	
6 7 8 9 1	52 50 47 52 66 50	18 32 26 26 43 26	42 39 38 43 46 42	12 25 17 18 33 23	45 44 50 47 55 47	18 32 28 26 36 29	59 56 46 54 71 57	35 36 30 34 50 42	51 49 49 54 63 48	24 34 28 29 43 32	51 45 48 44 61 46	33 31 25 31 40 37	60 59 45 49 62 58	25 43 29 28 38 33	54 52 53 57 71 54	29 33 20 27 47 37	62 62 45 61 69 58	39 38 35 38 55 49	60 52 58 66 76 50	25 45 21 22 43 38	52 49 49 50 67 49	32 32 28 30 45 38	48 53 45 60 48	28 26 28 39 32	54 49 45 48 51 50	22 34 26 36 26 28	61 62 51 60 70 56	
fns	55.0	30.5	47.1	24.4	50.7	32.0	56.5	38.9	52. 5	33.8	53.3	37.4	57.0	36. 9	59. 5	37.4	60.3	45. 4	62.1	34. 5	54.8	38. 0	53.8	34.1	57.0	32. 5	60.7	42

							So	outh Ca	arolina													Geo	rgia.					
Date.	Charle	eston.	Colu	nbia.	Conw	ay.§§	Fergu	son.§§		orge- wn.	Gr	een- le.§§	Newl	berry.	Soc H	lety ill.	Alba	ny.§§	Atla	nta.	Aug	usta.	Dahle	onegs.	Mac	on.	Ron	ne.§§
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.								
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11 12 13 14	66 54 48 53 55	48 39 37 41 44	58 47 46 55 60	46 34 28 27 30	68 53 49 56 61	38 45 24 24 30	63 48 46 50 57	34 43 29 26 31	70 62 42 62 58	43 39 28 30 40	48 45 44 50 60	32 24 24 18 20	52 47 47 55 62	45 33 25 25 26	62 56 56 54 58	45 32 29 33 37	63 48 50 55 60	35 37 37 39 38	43 37 47 50 58	37 27 27 27 34 40	56 47 48 56 62	41 37 32 29 34	47 42 45 55 58	38 25 23 22 22 25	55 46 48 56 62	39 32 32 30 37	44 35 49 50 60	25 28 27 22 22 22
16 17 18 19	58 63 68 57 58	43 44 54 41 37	64 64 68 52 59	39 36 50 37 31	65 77 73 55 63	35 30 54 42 27	64 79 66 57 59	33 30 32 40 26	62 70 64 68 63	41 35 34 34 34 34	57 59 57 55 52	24 34 40 33 26	63 65 66 58 59	31 32 43 36 30	62 71 67 59 60	35 55 45 36 44	79 74 64 54 62	40 40 54 35 27	62 65 60 44 55	40 45 38 33 32	64 62 67 50 59	37 38 49 38 32	59 58 59 52 54	40 37 50 33 28	67 71 61 50 60	37 44 46 35 28	59 59 60 48 56	27 28 45 34 20
21 22 23 24 25	60 48 47 58 53	45 42 42 40 37	61 48 39 50 52	41 39 38 33 27	66 65 41 52 63	35 34 35 37 24	62 58 50 52 60	37 37 35 36 28	62 46 46 48 52	42 41 38 32 27	56 40 34 46 48	30 35 33 26 24	60 42 45 49 52	32 39 33 32 24	60 49 49 48 52	46 45 38 33 38	62 68 55 57 59	32 42 50 43 35	52 42 39 44 50	38 36 32 32 32 34	60 47 40 52 54	40 39 35 35 28	52 43 39 44 48	32 36 31 32 24	61 45 41 49 54	36 41 37 32 28	48 39 36 47 53	26 35 35 35 24
26 27 28 29 30	61 59 47 59 68 57	49 39 32 38 53 52	53 50 50 51 67 49	40 34 26 30 49 42	62 52 63 71 75 55	35 33 24 25 45 41	58 51 52 66 73 50	38 35 23 26 41 42	60 52 46 66 66 66	49 35 28 38 58 52	47 46	35 40 26	49 49 50 50 64 51	34 42 22 26 45 37	58 51 50 68 69 56	53 32 33 45 48 48	59 50 54 63 63 54	42 48 28 32 40 50	52 42 47 48 56 48	41 32 27 36 43 42	50 50 49 53 66 47	41 34 27 31 46 42	48 46 50 45 49 49	36 34 25 28 36 31	52 51 50 57 63 49	42 35 29 32 44 43	50 53 52 50 52 47	24 29 22 23 38 35
Mns	60.7	46.5	58.3	40.8	63.8	38.20	60.9	37.9	62.2	41.7	53, 3d	34.10	57.5	38.0	61.0	42.9	63.3	44.1	52.1	39.3	58.3	41.8	52.4	35.6	58.3	41.2	52.4	33.5

TABLE 3.—Maximum and minimum temperatures at selected stations for December, 1912. District No. 2—Continued.

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Mns	73.8	57.2	53.6	37.7	60.8	41.3	53.0	38.8	58.1	38.2	60.7	46.5	58.2	42.5	53.5	37.3	59.7	40.6	54.0	34.9	58.2	41.3	59.6	41.0	55.9	39. 7

*, b, *, etc., indicates respectively 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 3, OHIO VALLEY.

Prof. FERDINAND J. WALZ, District Editor.

GENERAL SUMMARY.

The weather prevailing during December, 1912, in the Ohio Valley, was unusually mild and pleasant for the season of the year and remarkable on account of the absence of severe storms and harsh, wintry conditions common to December. There was only one general snow of consequence and only two cold periods, and at only a few stations did the temperature go below zero. In the sections north of the Ohio River and in Pennsylvania and West Virginia, the month takes rank among the mildest Decembers on record and, except December, 1911, the warmest since 1891.

Precipitation was decidedly deficient in the Wabash River Basin of Illinois and Indiana, much in excess in the Tennessee River Basin of western Tennessee and northern Alabama, and about normal or ample in all other sections. There was little or no snow covering, but the need of it was not felt to any great extent. During the first week there was much warm, rainy weather and from the 9th to the 12th it was quite cold, but on the whole the month was unusually favorable for outdoor employment and for the prosecution of building operations and general construction work, also for the gathering of the remainder of the corn crop. At the close of the month dirt roads were reported generally as excellent, being an exceedingly uncommon condition at that time of the year.

The following table summarizes the chief features of meteorological interest for the several sections of the

district:

	3	em per	atur	0.			Precip	pitation	n.		
Portions of States included in the Ohio River Basin,	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest month- ly.	Least monthly.	Greatest in 24 hours.	Average number of days.	Average snow-
New York	31.9	+5.9	62	7	2.91		3.26	2.56	0.95	15	10.
Pennsylvania Maryland	34.3	+3.6	67 62	-10	2.74	-0.50 -0.28	4.72	1.70	1.24	11	7. 15.
West Virginia	35.8	+2.2	76	- 6	2,92	-0.40	5, 55	1.67	1.98	10	6.
Ohio	34.3	+2.6	74	- 5	2.46	-0.38	4. 26	0.96	2.00	8	3.
ndiana	34.7	+2.7	68	2	1.50	-1.39	3.26	0.52	1.00	6	1.
Illinois	35.6	+2.9	64	3	1.18	-1.52	2.82	0.43	0.96	6	0.
Kentucky	37.2	+0.8	73	5	3.98	+0.13	6.81	2.12	2.13	9	5.
rennessee	40.0	+0.7	71	2	5.60	+1.29	8.61	1.95	2.55	10	1.
Alabama	41.2	-0.9	72	14	6. 91	+2.40	9.33	5, 51	2.49	13	0.
Georgia	42.4	+1.4	66	19	4.61	-0.97			1.10	12	0.
North Carolina	39.1	+1.7	71	6	3.24	-1,22	7.11	0.90	1.70	9	1.
Virginia	35.2	+0.7	73	- 6	2.94	-0.57	5.87	1.27	1.66	9	3

TEMPERATURE.

The month opened unseasonably warm and through the first week the weather was generally warm and rainy, mean daily temperatures ranging from 5° to 20° above normal and maximum temperatures registering in the

60's and 70's in all parts of the district. A change to colder set in about the 7th, and in most sections from the 8th to the 13th the coldest weather of the month was experienced, the lowest temperatures as a rule being registered on the 11th, 12th, or 13th. The temperature did not go to zero or below, however, except at two stations, one in Ohio and the other in southwestern Virginia, the lowest being -5° at Bellefontaine, Ohio. This cold period was followed by abnormally warm weather extending from the 14th to the 20th and which in turn was succeeded by a period of moderately cold weather. This second cold spell extended in varying degree until the 26th or 27th, and while over the major portion of the district temperatures did not get as low as they had been earlier in the month, yet at many stations in the more easterly portions of the district south of Pennsylvania the lowest temperature of the month was reached on the 25th or 26th. Also on the 26th the lowest temperature of the month for the entire district, -10° . was registered at Oakland, Md. One other station in western Marlyland, three in West Virginia, and one in southwestern Virginia reported minimum temperatures ranging from 0° to -8° at that time. All of these stations, however, except two in West Virginia are at an elevation of over 2,000 feet.

Temperatures were considerably above normal generally at the close of the month. The only section where the temperature of the month averaged below normal, was northern Alabama. In all other sections average temperatures were above normal, the excess increasing

northward and eastward.

PRECIPITATION.

Precipitation was fairly well distributed through the month, except that the larger portion of the total amounts occurred during the first week, the 17–19th, 26th–27th, and the 29th–30th, and nearly all the snow in the snowstorm of the 23d–24th. There was a fairly heavy fall of snow, however, in Indiana, Ohio, and western Pennsylvania on the 18th–19th.

The total precipitation for the month ranged from less than 1 inch in the Wabash section of Illinois and central Indiana to over 9 inches in northwestern Alabama. It averaged above normal only in central and southern Kentucky, Tennessee, and Alabama, while the greatest deficiency was in Illinois and Indiana. Over the remainder of the district it was near normal, or at least ample, the monthly amounts ranging mostly between 2 and 4 inches.

SNOWFALL.

The total snowfall for the month was considerably less in all parts of the district than usually expected in the month of December. There was little or none in the extreme southerly portion of the district and very little more than flurries over the larger portion of Illinois. Over the rest of the district the amounts ranged from 1 to 16.3 inches, the larger amounts occurring in the mountain sections of Pennsylvania and West Virginia and over Kentucky. Elsewhere, as a rule, the snowfall was largest in sections more nearly bordering the Ohio River.

MISCELLANEOUS.

Thunderstorms occurred in Tennessee on the 4th, 5th, 18th, and 27th; in Kentucky on the 5th, and in West Virginia on the 18th. At Camden, Benton County, Tenn.,

hail to an average depth of several inches, and from 6 to 10 inches in drifts, occurred on the 18th; also lightning struck a large shade tree in the yard of a resident, completely destroying the tree and injuring several persons.

Rivers.—Heavy rains during the first week caused a temporary rise of 10 to 16 feet in the Cumberland River; also a moderate stage of water in the Tennessee River, and good navigable stages obtained in that river the remainder of the month. There was a moderate rise in the streams of western Pennsylvania about the 7th-8th, and they remained quite steady at a moderate stage the rest of the month. Over the remainder of the district the rivers and streams were at low stages.

TABLE 1.—Climatological data for December, 1912. District No. 3, Ohio Valley.

			years	Temp	perature	, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	N u m b e r of cloudy days.	Prevailing wind tion.	Observers.
New York.																				
lleganyolivar	Cattaraugus Allegany Cattaraugus	1,441 1,800 1,402	6 18 4	32.8 31.0	+ 5.9	62 60	6	7 8	9	39 32			0.95	7.9	15	5	8 8	18 18	w. w.	Charles E. Whitney. Dr. C. F. Hoffman. John W. Alles.
Pennsylvania. kleppo. saldwin. seaver Dam srookville larion. laysville. onfluence 'ranklin. reeport ireensboro. Greenville. ndiana ohnstown. ook No 4. yeippus fosgrove. 'ittsburgh aegerstown haron. kidmore. oomerset. j	Beaver Jefferson Clarion Washington Somerset Venango Armstrong Green Mercer Indiana Cambria Washington Westmoreland Armstrong Allegheny Crawford Mercer Lawrence Somerset Fayette	1, 135 1, 404 674 1, 173 1, 078 1, 127 1, 352 955 772 768 950 1, 350 1, 184 1, 420 775 842 1, 116 940 1, 000 2, 250 999 1, 137	111 6 18 21 27 8 28 38 39 23 16 15 24 26 20 1 42 21 1 8 56 24 23	31. 7° 34. 6 36. 2 33. 0 32. 8 34. 9 36. 0 36. 2 35. 8 32. 1 34. 4 32. 0 32. 8 38. 0	+ 4.6 + 4.3 + 1.8 + 5.2 + 3.3 + 3.9 + 1.1 + 3.3 + 4.1 + 4.6	63 60 67 63 67 61 64 66 61 62 57 60 60 67 63	5†6 6 6 3 6 6 6 6 6 6 6 6 6 6 6	8 8 8 9 111 11 10 10 10 11 16 6 6 12 10 10	13 13 13† 23	33 32 28 38 38 27 28 31 29 28 37 34	1.70 2.10 2.14 2.57 2.71 2.48 3.33 3.56 2.76 3.01 2.42 3.33 2.93 2.93 2.91 3.13 2.86 2.71 2.13	- 0.24 + 0.21 - 1.13 - 0.38 - 0.66 - 0.64 + 0.13 - 0.69	1.00 0.60 0.61 0.85 0.60 0.77 0.62 0.93 1.24 0.90 0.84 0.63 0.69 0.60 1.05 1.13 0.80 0.85	8.0 4.0 12.6 5.0 4.2 9.2 7.2 6.0 11.4 4.5 10.4 2.6 5.1 8.5 8.0	7 7 12 13 6 10 13 13 13 12 10 16 9 10 13 14 11 11 7 9	12 8° 8° 5 11 13 8 8 12 8 7 7 5 1 1 12 0 11 7 7	4 2a 2 2 2 3 3 5 5 10 10 115 0 13 3 7 7 4 4 14 6 1	15 20° 21 21 26 11 16 21 22 20 14 18 14 16 15 24 12 28 14 15 17 14 23	SW. W. W. W. W. W. SW. SW. SW. SW. SW. S	J. S. Hinerman. S. H. Templeton. U. S. Engineer. H. C. Bartholomew. J. A. Miller. E. T. Buchanan. Grant Pyle. F. E. Dixon. Mrs. Anna R. Burtner James G. Cramer. A. M. Orr. R. W. Wehrle. E. C. Lorentz. R. T. McGowan. Murray Forbes. C. J. Moore. U. S. Weather Bureau. J. G. Apple. Norman S. Powell. W. H. Stoner. W. M. Schrock. Wm. Hunt. Anna Simpson.
eer Parkrantsvilleakland	do	2,457 2,351 2,461	18 18 12	33.0	+ 4.1 + 4.0 + 3.5	61 60 62	6 6	$-8 \\ 7 \\ -10$	26 12† 26	54 39 54		- 0.36 - 0.06 - 0.41	1.00 1.00 0.70	17. 0 16. 3 12. 3	7 9 11	9 10		12 10	w.	S. P. Specht. J. S. Miller. R. E. Weber.
West Virginia. Bancroft. Beekley. Beekley. Beekley. Beekley. Bueckhannon Buefield. Bueckhannon. Buefield. Bueckhannon. Central Station. Charleston. Teston. Leantelleston. Teston. Leantelleston. Teston. Leantelleston. Teston. Leantelleston. Leante	Raleigh Pleasants Mercer U pshur Ritchie Doddridge Kanawha Wirt Jackson Wayne McDowell Randolph Marion Gilmer Taylor Summers do Nicholas Cabell Greenbrier Logan Harrison Boone Marion Harrison Boone Warie Harrison Focahontas Monongalia Marshall Hancock Wetzel Fayette Wood Tucker Barbour Randolph Mason Fayette Mercer Putnam Roane Wetzel Roane Braxton Preston Monore Clay Brooke	574 2, 440 622 2, 563 1, 472 667 900 518 612 514 1, 933 1, 940 879 738 985 1, 600 1, 400 2, 200 967 2, 169 967 2, 169 987 634 2, 252 640 987 634 2, 252 1, 192 2, 785 553 904 2, 469 574 639 3, 207 1, 192 2, 785 639 1, 192 2, 785 640 1, 192 2, 785 65 1, 192 2, 785 65 1, 192 2, 785 65 1, 192 2, 785 65 1, 192 2,	100 133 101 172 111 6 202 133 188 16 222 1 1 1 18 110 15 8 111 177 36 100 144 188 111 110 144 118 119 119 119 119 119 119 119 119 119	33. 8 34. 6 35. 8 34. 6 40. 2 34. 2 38. 0 34. 6 40. 2 34. 2 38. 0 34. 6 6 35. 5 35. 7 2 34. 6 6 35. 5 35. 7 2 37. 7 35. 1 37. 2 37. 0 38. 6 6 35. 2 37. 0 38. 6 35. 2 37. 0 37	+ 2.2 + 3.0 + 1.6 + 3.3 + 4.1 + 0.7 - 0.3 + 2.1 + 2.9 + 1.7 + 2.7 + 3.7 - 1.2 + 4.3 + 4.3 + 4.3 + 4.3 + 1.8 + 2.9 + 2.9 + 1.9 + 1.9	74 69 65 71 70 68 69 74 70 72 72 72 63 66 62 67 73 73 68 61 74 76 76 68 69 69 69	52655655555555555555555555555555555555	55 51 11 10 3 3 56 61 13 4 4 2 2 2 3 12 - 1 - 6 9 10 12 11 13 0 0 5 7 7 8 8 2 2 11 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13 9† 13† 13† 26 25 25 25 25 25 12 26 26 26 26 26 26 26 26 26 26 26 26 26	40 44 43 43 43 45 43 45 43 44 43 44 45 43 43 44 43 43 43 44 43 43 43 44 43 43	2.91 3.44 3.60 2.87 2.37 3.51 2.54 2.298 3.42 2.298 3.42 2.298 3.43 2.260 2.254 2.291 3.51 3.51 3.57 3.51 3.57 3.51 3.57 3.51 3.57 3.57 3.57 3.57 3.57 3.57 3.57 3.57	- 0.04 + 0.39 - 0.67 - 1.22 - 0.61 - 0.84 - 0.72 + 0.52 - 0.13 - 0.67 - 0.55 - 0.90 - 0.37 + 0.08 - 0.18 - 0.21 - 0.21 - 0.57 - 0.57 - 0.57 - 0.59 - 0.10 - 0.21 - 0.21 - 0.25 - 0.10 - 0.25 -	0.67 1.78 0.72 0.65 0.72 0.80 0.91 0.56 0.80 0.91 0.68 0.90 1.70 0.85 0.91 1.70 0.85 0.91 1.70 0.85 0.90 1.16 0.72 0.82 0.85 0.91 0.58	6.8 6.00 7.0 7.0 5.5 5.5 8.0 10.7 7.0 5.0 5.0 5.0 15.5 6.0 10.7 8.0 10.7 10.0 10.0 10.0 10.0 10.0 10.0 10	10	166 99 19 166 19 15 11 10 11 14 19 166 15 13 11 14 17 200 16 15 16 17 10 11 14 17 19 16 17 19 11 14 19 10 11 14 19 10 11 14 19 10 11 14 19 10 11 11 11 11 11 11 11 11 11 11 11 11	4 5 16 10 4 8 8 2 0 0 3 3 6 6 2 3 3 0 0 7 7 6 6 4 4 7 7 13 9 9 10 1 1 6 4 4 18 3 3 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 6 12 1 6 1 6	15 5 10 13 14 13 16 15 14 14 14 4 5 11 11 12 3 13 14 11 11 12 13 14 14 15 11 11 11 11 11 11 11 11 11 11 11 11	W. W	R. E. Dent. John A. Ewart. John A. Ewart. John A. Ewart. J. D. Riggs. Norfolk & Western Ry H. A. Darnall. Van A. Zevely. G. W. Sherwood. R. C. Hewes. J. M. Reed. C. T. Perry. L. A. Smith. J. J. Lincoln. U. S. Weather Bureau. F. P. Hall. Joe N. Craddock. Joseph Gerken. Arthur George. J. B. Lavender, C. E. R. C. Ferguson. L. H. Hutchinson. Geo. T. Argabrite. Dr. J. E. McDonald. Allen Smith. S. E. Bradley. Jas. A. Morgan. C. J. McCarty. Horace Atwood. M. L. Brown. Frank S. Evans. Wm. Ankron. Miss Donna Tully. U. S. Weather Bureau J. W. Swisher. J. D. Dadisman. Dr. J. L. Cunningham W. D. Holmes. Morris Hansford. H. Scott. E. P. Turley. Wm. E. Ryan. G. M. Whisler. A. M. McKown. J. E. Baughman. W. B. Elliott. Shelton Clark. Miss Blanche Pierson. C. P. Waugh. Miss C. M. Davis. Miss M. B. Forsyth. J. F. Keyser.
Ohio, mesville. angorville ellefontaine. ladensburg. rilliant. dix.	Athens	630 1,380 1,276 1,100 700 1,245	8 25 33 19	35.0 32.6 31.6	+ 2.5 + 2.1 + 3.0	65 58 61 59 70 60	6 6 5 6 4 5†	4 4 - 5 7 11 9	25 11 12 12 12 12	40 34 40 36° 33 29	2.48 2.56 2.53 1.90 2.33 2.90	- 0.40 - 0.28 - 0.87	0.75 0.75 0.91 0.82 0.86 1.12	3.0 4.0 5.2 2.0 4.0 7.5	7 8 8 6 4 7	13 6 14 13 12	10 15 8 6 8	8 10 9	SW. SW. W. SW.	F. W. Gibson. S. M. Painter. Cory L. Lane. Miss Mary Elliot. Mrs. Mary K. Pennell. Harry B. McConnell.

Table 1.—Climatological data for December, 1912. District No. 3—Continued.

			year	Tem	peratur	e, in	degre	es Fab	renh	neit.	Prec	eipitation	, in in	ches.	days,		Sky.		diree-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Меап.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	umber of p	cloudy days.	Prevailing wind tion.	Obs er vers.
Ohio-Continued.																	10	0		
Cambridge Camp Dennison Canal Dover Cantal Dover Cantal Dover Cardington Cardington Cinclinati Circleville Clarington Cotumbus Coshocton Dayton (1) Dayton (2) Delaware Demos Dennison Frankfort Gallipolis Garrettsville Gratiot Graen Hill Green Green Hill Green Green Hill Green Green Hill Green	Hamilton Tuscarawas Stark Morrow Ross. Hamilton Pickaway Monroe. Franklin Coshocton. Montgomery	600 918 770 899 790 896 1,325 580 1,005 960 1,000 1,135 1,060 601 700 1,063 575 1,015 640 898 710 627 980 1,100 1,105 1,145 1,100 1,063 1,101 1,063 1,101 1,	200 199 199 299 411 244 2 2 200 233 119 266 333 229 200 191 177 282 314 200 1191 117 291 2191 117 291 117 291 117 291 117 291 117 291 117 291 117 291 117 291 117 291 117 291 117 291 117 291 291 291 291 291 291 291 291 291 291	33. 8 32. 6 33. 2 33. 8 32. 6 33. 8 34. 4 34. 1 35. 2 32. 2 33. 0 34. 4 34. 4 35. 2 33. 2 33. 3 32. 4 34. 3 35. 6 35. 4 34. 1 35. 5 4 35. 6 35. 4 34. 1 35. 6 35. 4 34. 5 35. 6 37. 4 38. 6 37. 4 38. 6 37. 4 38. 6 37. 4 38. 6 37.	+ 2.5 + 2.0 + 3.6 + 3.6 + 1.6 + 1.6 + 2.7 + 1.8 + 3.4 + 1.9 + 1.1 + 2.7 + 1.8 + 3.4 + 1.9 + 1.1 + 3.4 + 1.9 + 1.1 + 2.7 + 2.7 + 4.0 + 1.1 + 2.7 + 3.4 + 1.9 + 1.1 + 2.7 + 3.4 + 4.1 + 2.9 + 4.1 + 2.9 + 4.1 + 2.1 + 2.6 + 3.2 + 2.6 + 3.2 + 2.6 + 3.2 + 3.2 + 4.0 + 3.2 + 4.0 + 3.2 + 3.2 + 4.0 + 4.0	64 65 60 60 65 66 66 61 62 62 60 65 59 60 65 59 60 65 59 60 65 59 60 65 66 66 67 67 67 67 67 67 67 67 67 67 67	555555555555555555555555555555555555555	7 8 10 9 9 9 10 13 10 8 8 10 10 10 11 11 8 2 12 17 10 8 12 12 17 10 8 8 8 8 8 8 8 8 8	12 12 12 12 12 12 12 12 13 12† 13 12† 25 13† 12	30 31b 31 32 38 32 31 32 29 28 37 33 31 40a 32 37	3.27 2.25 3.31 2.29 9.30 6.22 9.30 1.22 1.23 1.22 1.23 1.24 1.24 1.25 1.25 1.25 1.25 1.25 1.25 1.25 1.25	+ 0.01 - 0.45 - 0.85 - 0.59 - 0.57 - 0.68 + 0.16 - 0.35 - 0.30 - 0.64 - 0.31 - 0.61 - 0.42 - 0.64 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.41 - 0.43 - 0.85 - 0.92 - 0.21 - 1.73 - 0.08 - 0.92 - 0.21 - 1.73 - 0.08 - 0.80 - 0.80 - 0.92 - 0.21 - 1.73 - 0.08 - 0.80 - 0.92 - 0.21 - 1.73 - 0.08 - 0.80 - 0.92 - 0.21 - 1.73 - 0.08 - 0.80 - 0.92 - 0.21 - 1.73 - 0.08 - 0.92 - 0.21 - 1.73 - 0.08 - 0.80 - 0.92 - 0.21 - 1.73 - 0.08	1. 41 0. 62 0. 70 0. 70 0. 76 0. 61 1. 00 0. 95 0. 58 1. 00 0. 63 1. 00 0. 63 1. 00 0. 66 0. 68 0. 68	3.0 1.0 1.0 1.0 1.1 2.4 1.1 2.1 1.5 1.3 3.0 4.5 1.1 2.7 1.5 1.0 1.0 1.1 1.0 1.0 1.0 1.0 1.0	7 9 7 7 10 6 9 9 9 8 8 10 1 1 1 8 8 9 9 4 9 9 6 7 6 1 1 9 8 8 9 9 4 8 5 5 9 1 1 10 7 5 7 7 9 1 1 10 7 5 7 7 9 1 1 1 1 1 1 1 7 7 5 7 9 9 9 9 7 7 4 8 8 8 9 8 6 8 8 7	7 15 7 10 15 7 11 15 10 9 9 9 14 11 11 15 16 9 9 9 7 7 2 7 10 5 7 7 14 12 2 9 11 11 5 7 7 10 12 8 8 8 12 12 12 14 7 8	0 75 55 8 8 2 9 6 2 9 6 2 10 3 3 13 5 5 11 14 7 7 9 9 9 11 11 13 11 14 17 14 17 14 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	8 5 8 14 24 13 11 16 14 14 15 11 11 16 14 14 14 17 13 10 11 18 13 11 13 16 7 17 9 10 19 7 15 13 10 10 11 14 9 6 10 18 10	SW.	Samuel Mehaffey. Henry F. Pinkvoss. Ed. S. Slingluff. Carl H. Meyer. J. W. Shaw. Marion Mackey. U. S. Weather Bureau. Dr. H. R. Clarke. Col. S. Tschappat. U. S. Weather Bureau. Mrs. Ada Jeffries. U. S. Weather Bureau. Mrs. Edith L. Boyer. DeWitt H. Leas. J. T. Dysart. Water Supply Co. O. A. Cory. Samuel F. Neal. S. M. Luther. Dr. L. E. Davis. W. B. Longstreth. W. F. Kenyon. Jos. E. Bentley. Geo. A. Katzenberger. Earl W. Stout. H. W. Stiers. Carey H. Roush. James Bull. N. S. Martin. John A. Schonauer. Frank M. See. R. L. Renshaw. C. H. Morris. Prof. T. D. Biscoe. Dr. E. H. Raffensperger. L. H. Burgess. V. C. Eveland. G. F. Copeland. Ethel L. Gammertsfelde Clayton Holl. Sam C. Scott. Prof. H. C. Lord. E. H. Stephens. J. N. Ridenour. Ora O. Smalley. L. C. Burckholter. Harry L. Roberts. F. E. Stewart. Dr. H. A. Schirrmann. Neil J. Gast. Hamline B. Blake. Miss M. W. C. Sheridan. W. A. Webster. H. R. McClintock. Irving R. Karr. D. D. Thomas. H. A. Albyn. Prof. J. H. Williams. M. D. McCorkle. Dr. Peru Hutt. Charles Michener. Experiment Station. J. M. Dickey.
nderson ttica loomington lufton utlerville ambridge City olomersville rawfordsville elphi minence vausville armersburg armland orest Reserve rench Lick reensburg lickory Hill untingburg untington dianapolis effersonville oldville oldville oldville oldville oldville oldvome afayette ogansport	Madison. Fountain. Monroe. Wells. Jennings. Wayne. Bartholomew Fayette. Montgomery. Carroll Morgan. Vanderburg. Sullivan. Randolph. Clark. Orange. Hancock Decatur. Brown. Dubois. Huntington Marion. Clark. Warren. Howard. Tippecanoe. Cass.	5222 7444 835 767 941 632 769 780 688 782 386 1,101 478 506 905 741 822 455 455 450 840 661 761	17 2 17 17 17 27 22 22 27 6 36 14 30 9 16 41 30 5 20 30 30 30 30 30 30 30 30 30 30 30 30 30	32.6 33.1 35.4 31.9 35.0 35.0 35.0 32.4 33.7 38.0 36.0 32.9 34.6 32.8 39.0 33.3 34.6 32.8 37.6 32.7 33.3 34.6	+ 4.5 + 0.5 + 4.9 + 1.9 + 2.5 + 0.8 + 3.3 + 1.6 + 4.6 + 1.0 + 2.1 + 4.8 + 2.0 + 0.8	65 59 63 60 61 62 67 61 63 62 59 64 60 60 66	5 1 5† 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 5 8 6 5 6 5 6 5 6 5 6 7 12 12 12 12 14 14 14 14 14 14 14 14 14 14 14 14 14	12 12†12 12 12 12 12 12 12 12 12 12 12 12 12 1	33 29 31 41 36 33 36 40 33 32 35 32 34 33 34 36 46 30 32 32 37 34 33 34 40 34 40 34 40 40 40 40 40 40 40 40 40 40 40 40 40	0.73 1.90 1.20 3.02 1.27 1.57 1.66 0.85 1.69 0.69 1.77 1.12 1.20 2.23 0.94 1.43 2.23 0.76 0.76 0.76	- 1. 64 - 1. 66 - 1. 26 - 0. 13 - 1. 59 - 1. 28 - 1. 31 - 1. 66 - 2. 14 - 2. 17 - 1. 47 - 1. 64 - 1. 85 - 1. 61 - 0. 60 - 1. 52 - 1. 84 - 1. 64	0. 48 0. 27 0. 53 0. 76 0. 52 0. 55 0. 29 0. 60 0. 45 0. 77 0. 50 0. 55 0. 77 0. 50 0. 55 0. 30 0. 45 0. 55 0. 30 0. 55 0. 30 0. 30 0. 55 0. 30 0. 30	1.5 0.3 1.5 6.4 0 3.5 3.0 T. T. 3.0 4.3 1.1 1.0 0.0 9.1 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	656687675335499479866588791264456	13 12 16 17 19 16 17 19 19 15 8 17 17 16 17 16 17 17 16 17 17 18 18 18 19 11 11 11 11 11 11 11 11 11	6 7 0 4 9 6 9 10 9 17 2 6 24 5 10 12 5 6 2	8 11 16 8 14 8 10 9 13 2 7 6 12 7 7 9 5 10 7 10 11 11 11 15 17	SW. SW. S. S. SW. SW. SW. SW. SW. SW. SW	W. H. Stanton. J. Frederic Connell. Earl E. Ramsøy. George R. Rinehart. C. F. Hole. Heze Barnett. John A. Perry. H. T. Swindler. P. H. Burns. L. A. Higginbotham. E. E. Kelso, M. D. U. S. Weather Bureau. Miss Carrie Yeager. Ralph E. Lyst. Ambrose Waltman. U. S. Weather Bureau. Frank Larrabee. C. C. Morrison, M. D. Benjamin W. Douglass. H. Dufendach. Chas. McGrew. U. S. Weather Bureau. John C. Loomis. Dale R. Warrick. P. H. Robertson. Wm. J. Jones, Jr. Chas. Masseua.

Table 1.—Climatological data for December, 1912. District No. 3—Continued.

Stations. Counties. Counti						Sky.		direc-												
Stations.	Counties.		Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		0	Total.	Departure from the normal.	in .s.	Total snowfall, unmelted.	ainy or m	Number of clear days.	0.0	N u m b e r o f cloudy days.	Prevailing wind c	Observers.
Indiana—Continued.																				
foores Hill fount Vernon fashville aoli rinceton fichmond cochester foore forme f	White. Dearborn Posey. Brown Orange Gibson Wayne. Fulton Parke. Perry Jay Washington. Seott. Jackson Shelby Martin Vigo. Fountain Switzerland Knox. Daviess. Boone. Kosciusko.	674 980 410	2 11 26 	35. 0 36. 6 34. 8 35. 4 36. 0 33. 0 35. 0 38. 0 32. 2 35. 1 36. 4* 36. 2 34. 7 34. 5* 35. 4 35. 5 36. 2 38. 5 36. 2 38. 0	+ 3.2 + 1.0 + 2.7 + 1.1 + 3.0 + 3.6 + 2.3 + 1.8 + 2.1 + 1.8 + 5.2 + 2.6 + 3.4 + 3.1	62 62 65 66	5 5† 5	8 14 6 8	12 12† 12† 12† 12 12 12 12 12 12 12 12 12 12	31 32 35 33 32 32 31 33 33 33 33 33 34 35 33 33 33 33 33 33 33 33 33 33 33 33	0.65 2.28 1.49 1.30 1.71 1.55 1.43 1.14 0.80 2.09 3.26 1.77 1.43 1.40 1.10 0.52 1.40 1.10 1.10 1.34 1.14 1.14	- 0.80 - 1.78 - 1.96 - 1.46 - 1.24 - 1.70 - 0.44 - 0.06 - 1.32 - 1.53 - 1.47 - 0.57 - 2.06 - 1.96	0. 32 0. 63 0. 65 0. 44 0. 71	T. 4.0 1.0 0.5 3.5	3 7 7 5	18 14 22 12 10	8 5 2 1 9 13 3 13 3 19 7 8 10 10 9 17 16 2 12 8 6 2 1 1 19 14 10	11 8 15 8 10 8 9 9 10 11 11 9 12 10 10 5 7 6 8 9 6 10 8 10 8 7 7	SW. W. SW. SW. SW. SW. SW. SW. SW. SW. S	Elwood Kirkwood. J. E. Loughry. W. S. Bigney. Guy B. Green. W. C. Goble. James A. Gillum. Albert Mills. Walter Vossler. G. P. Keith. C. A. Lee. Adam Anspach. S. A. Armstrong. Emmet S. Allen. Frank H. Park. J. Robt. Blair. Edgar G. Hodson. Rev. G. Halleck Rowe. U. S. Weather Bureau. L. A. Culver, Jr. Miss Frederica Boerner. Garrett V. List. Charles C. Feagans. Clyde O. Laughner. Rev. Albert A. Young. D. W. Solliday.
Illinois. asey harleston Danville quality airfield lora olconda icopeston feteansboro fetropolis fontrose fount Carmel lew Burnside iewton llney aris. philo annoul. lileyville hawneetown luscola	Clark Coles Vermillon. Gallatin. Wayne. Clay Pope. Vermillon. Hamilton. Hamilton. Massac Effingham Wabash. Johnson. Jasper. Richland. Crawford Edgar Champaigndo. Saline. Gallatin. Douglas.	531 645 720 604 421 450 495 500 715 462 346 599 424 484 484 486 500 600 700 700 700 768 400 307 644 725	21 9 27 11 14 19 26 34 10 29 1 1 17 17 1 25 30 28 21 15 2 29 21 10 10 10 10 10 10 10 10 10 10 10 10 10	34. 9 35. 4 39. 9b 37. 0 36. 8 38. 0 34. 5 37. 1 33. 8 34. 8 37. 6 34. 7d 36. 5 32. 5° 32. 5° 32. 7° 33. 9	+ 5.5 + 3.1 + 2.7 + 2.8 + 0.8 + 1.4 + 1.3 + 1.6 - 0.3 + 3.4 + 3.2		5 5 7 5 5 2 6 5 1 1 6	10 11 ^f 10 6 5 4	12 12 12 12 12 12 12 12 -9† 13 12 12 12 12 12	35 32b 35 35a 32 35 40 33a 36 33f 34 39f 33 37	2. 15 0. 83 1. 10 1. 39 0. 76 1. 09 1. 30 0. 68 0. 93 0. 75	- 1.30 - 2.38 - 1.18 - 1.88 - 1.13 - 1.57 - 2.01 - 1.60 - 1.53 - 1.59 - 1.28 - 0.49 - 1.62	0.57 0.28 0.96 0.48 0.30 0.47 0.34 0.81 0.30 0.42 0.58 0.58 0.58 0.58 0.58 0.58 0.48 0.53 0.49 0.30 0.49 0.40	T. T. 3.0 1.0 T. 4.0 0.2 T. 6.0 T. 3.8 T.	5 3 3 7 6 6 6 6 4 7 7 7 5 5 5 7 7 5 6 5 5 4 6 4 5 5 5 7 7 6 4	19 18 12 16 22 9 15 17 16 19 18 14 19 23 22 20 19 11 16 16 17 7	4 9 9 6 2 18 8 3 7 7 5 4 4 14 5 1 2 2 6 6 4 16 9 5 5 2 2	8 4 4 10 9 7 7 4 8 11 1 8 7 7 7 7 7 5 8 4 4 6 6 10 12 7 6	W. nw. sw. sw. sw. sw. sw. sw. ssw. sc. sw. sw. sw. sw. sw. sw. sw. sw. sw. sw	B. F. Michels. Wm. Chenoweth. Jacob B. Dalsy. J. J. Lemon. Dr. L. W. Gordon. Geo. A. Tromly. W. L. Hanna. Dr. D. Lawrence. S. F. Hoskinson. Prof. W. C. Fairweather Henry H. Humma. J. C. Spitler. Mrs. H. M. Phillips. Thomas H. McCabe. J. M. Hicks. John T. Ratcliff. Duane Shaw. H. P. Twyman. H. A. Burr. William Breiner. W. H. Thornberry. Mrs. Mary O. Spivey. Joseph O'Neal. Prof. J. G. Mosier.
Kentucky. Alpha. Inchorage Sardstown Seatty ville. Seaver Dam Seaver	Jefferson Nelson Lee Ohio Madison Ballard Warren Pulaski McLean Boyd Hopkins Metcalfe Pulaski Pendleton Rowan Franklin Simpson Green Jessamine Christian Breckinridge Grayson Fayette Marion Lawrence Jefferson Crittenden Mason Bell Montgomery Daviess McCracken Pike Madison Hardin Kenton Boyle Shelby Spencer	700 637 650 441 1,070 773 397 544 370 668 560 691 581 762 524 635 989 681 1128 930 479 341 926 777	11 31 23 21 9 23 22 21 18 23 6 6 21 18 20 9 9 16 14 16 24 15 17 17 17 17 17 22 15 23 41 41 41 41 41 41 41 41 41 41	37.4 38.0 38.2 39.4 4 36.8 8 39.5 37.2 36.1 1 37.6 38.2 39.4 4 35.8 8 37.2 2 35.2 36.1 37.4 4 35.8 8 37.2 36.2 37.4 4 35.8 37.2 36.2 37.3 36.2 37.3 36.3 37.4 37.4 37.4 37.4 37.4 37.4 37.4 37	+ 0.3 - 0.8 - 0.8 + 0.6 + 1.9 - 0.6 + 1.0 + 0.4 + 1.1 + 1.5 + 1.0 - 0.6 + 0.4 + 0.9 + 0.6 + 0.6 + 1.9 + 1.9	65 67 64 64 65 66 68 69 65 63 72 67 64 64 64 66 63 66 63 72 67 65 63 64 64 64 64 64 64 64 64 64 64 64 64 64		5 12 10 11 13 13 10 11 11 11 11 11 11 11 11 11 11 11 11	12d 13 13 13 13 13 13 13 13 12 25 26 13 12 13 12 13 13 12 13 13 12 13 13 12 13 13 12 13 13 13 13 13 13 13 13 13 13 13 13 13	47 37 33 31 32 32 41 33**35** 34 34 36 33 33 31 46 38 34 41 30 31 31 32 32 35** 30 31 31 32 32 32 32 33 35** 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	3. 00 4. 43 5. 44 4. 86 6. 33 6. 44 4. 86 6. 39 5. 45 5. 45 6. 39 5. 45 6. 39 6. 39 6. 39 6. 39 6. 39 6. 40 6. 81	+ 0.81 - 0.90 + 0.25 - 1.33 + 2.12 + 2.33 + 0.18 + 2.53 + 1.08 - 0.56 - 1.51 - 0.78 + 0.34 + 0.34 + 0.34 + 0.34 + 0.34 + 0.93 - 0.12 + 1.94 + 0.93 - 0.56 - 0.56	1. 10 0. 79 1. 28 0. 73 1. 33 1. 33 1. 33 1. 33 1. 60 0. 78 1. 60 0. 78 1. 60 0. 78 1. 60 0. 70 1. 40 0. 70 1. 10 0. 70 1. 10 1. 10	8.2 5.2 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	77 100 133 77 77 77 77 79 100 111 112 6 6 100 77 77 111 129 8 8 9 9 111 112 9 9 100 100 100 100 100 100 100 100 100	133 16 3 10 16 13 13 12 17 10 13 16 14 15 15 15 15 11 12 11 11 11 11 11 11 11 11 11 11 11	100 7 3 3 111 4 4 1 1 1 5 5 2 6 6 4 4	133 8 188 133 122 100 166 77 111 112 66 122 155 111 144 122 111 113	S. W. In. S. W. W. S. SB. In. SW. In. S. SW. In. SW. S. SW. In. Se. In. Sw. W. S. SW. In. Se. SW. W. S. SW. W. Sw. SW	W. W. Hicks. C. E. Barrett. T. S. Talbott. G. W. Cann. W. T. Austin. C. F. Rumold. E. W. Horr. Mrs. L. G. Causey. G. M. Estes. W. A. Taylor. Mrs. Mertie M. Bruns Brick Southworth. Miss Lee Ray. Mrs. Katle Payne. J. V. Oldham. Miss Gertrude Sorrell. J. H. Roberts. J. E. Newman. Mrs. Bettie K. H. Alcort Miss Lulu Wood. W. F. Randle. W. J. Piggott. John E. Stone. U. S. Weather Bureau. Loretto Academy. L. S. Johnson. U. S. Weather Bureau. B. C. Paris. Mrs. Mary D. Marsh. B. H. Perkins. James O'Connell. Henry S. Berry. S. A. Fowler. I. M. Williams. J. W. Cłooke. Bethlehem Academy. E. B. Wilson. H. F. Ewing. C. R. Burnett. E. D. Bourne. Noble C. Jones.

Table 1.—Climatological data for December, 1912. District No. 3—Continued.

			years.	Tem	peratur	e, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in in		days,		Sky.	-	direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	un	~ =	mber of days.	Number of part- ly cloudy days.	N umber of cloudy days.	Prevailing wind tion.	Observers.
Tennessee.																				
Ashwood Benton			33 27		$+0.1 \\ +0.6$	66 71	5	16 16	13 14	32 38	5.61	+1.06 + 1.39	1.20	0.5 T.	10	11 9	6	15 16	8. n.	Mrs. Joseph W. Fleming. George L. Williams.
Birds Bridge	. Greene		15								$\frac{2.45}{2.77}$	- 0.40	0.50	0.5	12 10	12	3 4	16 20	e. e.	David B. George. Jno. W. Fisher.
Byrdstown	. Pickett	. 1,026	19		+ 1.2	67	5	13	13	30		+ 0.02	0.85	1.5	10	7 7	7 2	17 22	s. nw.	John Lacy. Earl C. Pickering.
Carthage		625	28 12		+1.3 - 0.7	69	3 5	12 13	13	32	6.44	+1.81 + 2.51	1.49	6.0	11	16	3	12	W.	J. Frank Ruffin.
Celina	. Clay	. 494	9								5.69		1.05	3.3	11	9	1	21 20	sw.	C. M. Anderson.
Charleston		. 709 808	15	42.7	+ 0.1	68	6	23	12	-30	7.75	+ 3.43 + 2.90	$2.30 \\ 2.51$	т.	11 15	8 9	6	16	n. ne.	John T. Weeks. U. S. Weather Bureau.
Chattanooga Clarksville	. Montgomery	. 500	49		+ 0.8	66	1	15	13	34	5.25	+0.82	1.45	7.5	12	16	4	11	S.	Prof. James A. Lyon.
Clinton	. Anderson	. 1,895	24			62	5	11	13	33	6.82	+ 2.36	1.73	T. 0.7	10	11	7	20	sw.	Hugh Evans. J. E. Converse.
Crossville			8								4.30		1.10	T.	12	8	9	14	w.	James E. Swann.
Decatur	. Meigs	. 850	16	40.0	+ 0.5 + 1.7	71	6	15 10	13†	36		+ 2.03 + 1.96	$\frac{2.00}{1.72}$	T. 3.5	14	13 12	6	15 13	sw.	J. Worth Lillard. Nathan R. Sugg.
Dickson Dover					+ 0.7	69	1	11	13	39	3.87	- 0.53	0.78	5.0	7	14	7	10	8.	Asa M. Tippit.
Dunlap	. Sequatchie	. 726	3	40.5		69	6	16	14	39	6.34	1 10	1.75	0.1	14	11	1	19 20	0.	S. Bradford Boyd. Charles Boyd.
Elizabethton Erasmus		1,575	22 15	36.1		64	3	5	13	45	2.11 5.67	+0.30	1.36	0.4	12	10	9	12	8W.	Mrs. Sarah E. Ashley.
Florence	. Rutherford	. 560	30	40.6	0.0	66	5	14	13	34	5.31	+ 1.42	1.44	2.0	9	14 16	6 4	11 11	8.	Erastus P. Bell. Young M. Rizer,
Franklin Halls Hill	. Williamson Rutherford		22 10	39.2	- 0.5	66	6	13	13	33	6.28	+ 0.92	1.40	0.1	9	12	3	16	n.	Edward Wright.
Hohenwald	. Lewis	. 983	26	40.6	+ 1.1	64	41	13	13	35	8.29	+ 3.26	2.19	T.	10	11 7	9	11	8.	Mrs. Mary Lutzelman. Capt. H. Paul Seavy.
Iron City	. Lawrence		15	40.4	+ 0.3	67	5	13	13	36	6.35	+ 0.79	1.40	0	12	4	10	11		Calvin C. Maddox.
Johnson City	. Washington	1,620	1	38.0		70	5	14	13	42	1.95	-1.53	0.58	0.5	10	15	7	9	W.	Ward Crosby.
Johnsonville	. Humphreys		16 21	40.2	+ 0.8	65	1†	12	13	38	4.64 7.86	+ 0.44 + 3.86	1.07	3.5 T.	11	12 12	6	13 19	s. n.	Miss Sallie B. Mathews. Henry Crumbliss.
Kingston Knoxville			41	39.7	0.0	70	6	18	13	30	6.42	+ 2.26	2.05	0.8	13	9	8	14	ne.	U. S. Weather Bureau.
Lebanon	. Wilson	. 522	3	41.1	1 0 1	66	17	10 12	25 13	40 38	5. 16 6. 48	+ 2.16	1.15 2.52	3.7 T.	10	9	5	17 14	S. S.	H. Logan Fields. Dr. Robert D. Crutcher.
Lewisburg Loudon			17	40.8	+ 0.1	07	5	16	10	99	7.11	+ 3.07	1.91	T.	10	9	2	20	W.	Robert W. Clark.
Lynnville	. Giles	. 770	24	40.5	- 0.6	66	4†	11	13	29	5.65	+ 1.15	2.05	0	6	12	6	13	n. n.	Col. James H. Burrow. Miss Alice L. Headrick.
McGhee McMinnville			28	42.0	+ 1.5	69	5	14	13	39	6.72 5.76	+ 1.37	1.80	T.	9	11	7	13	SW.	Horace H. Stiles.
Maryville	Blount	. 1,050	16	39.8	+ 0.2	69	6	18	12	31	6. 15	+1.25	1.53	0	6 7	8	8	15	w.	Mrs. Sam T. Broyles.
Mountain City Nashville	Johnson	2,486	15 41		+2.9 -0.7	71 66	5 5	2 16	28 13	47 31	1.97 5.14	-1.85 + 1.32	0.50	3.5	13	9	14	8	nw.	U. S. Weather Bureau.
Newport		. 1,280	22								3.83	+ 0.35	1.10	T.	11	10	3	18	w.	Dr. Chas. T. Burnett.
New River	. Scott	. 1,215	19	41 9	+ 0.4	66	5	14	13	34	6.24	+ 1.77	1.25	Т.	11	10	7	14	nw.	Mrs. Ross Woods.
Palmetto Perryville	Bedford Decatur		15	40.8	T 0.3	-0.00	5	12	13	36	6.63	+ 1.51	1.73	0	8	15	1	15		. Oliver C. Kirksey.
Pinewood	Hickman		5	90 0	1 1 1	67		13	13	36	4.32	+ 0.80	1.05	T.	13	11	8	12	w.	Miss Carrie Cash. Fred Beal.
Rogersville	Hawkins	1,150	27 24		+1.1 + 0.3	66	6	6	13	41	6.22	+ 1.86	1.45	3.0	10	10	5	16	n.	Samuel G. Wilson.
Savannah	. Hardin	. 442	28	42.1	+ 0.2	65	5	15	13	34	8.17	+ 3.56	2.55	T.	12	9	9	13 22	SW.	W. H. Carrington. Herbert O. Eckel.
Sevierville	Sevier	2,000	6	38.8 42.5	+ 4.3	68	19 5	15 16	13	38	4.02	- 0.48	1.20 2.00	0	5	11	8	12	n.	University of South.
Sparta	. White	. 920	6	39.7		68	5	12	13	38	3.85		1.20	0.0	5 12	13	6 3	12	w.	Ernest H. Hull. Hudnall A. Boden.
Springville	. Henry		9	39.2	- 0.2	65	6	7 8	25 13	39 42	4.30 7.23	-1.38 + 2.74	1.11	2.8 0.5	11	9	2	20	sw.	J. Caloway Carr.
Pullahoma	. Coffee	1,075	24		+ 1.0	66	5	15	13	35	6.60	+ 1.29	1,67	0.2	12	6	17	8	8.	Reuben T. Moore.
Walling	. White	909	9 26	40.7	+ 0.1	65	5	12	13	36	6. 16	+ 4.30	1.60 2.33	T. 0.2	11	10	14	17	n. sw.	John K. Roberts. Harry C. Boyd.
Waynesboro Wildersville	. Henderson	. 400	15		+ 2.8	69	2	15	13	41	4.26	-0.64	1.21	0.5	9	15	3	13	n.	William R. Wilson.
Worsham	. Sumner	. 550	11	40.0	+ 0 3	65	5†	16	13	39	6. 73	+1.14 + 1.37	1.70 1.80	6.0	10 8	12 13	6	16 12	nw.	James G. Elizer. William P. Watson.
Yukon	. Lincoln	. 500	15	40.9	+ 0.3	05	31	10	10	0.0	0.00	T 1.01	1.00			10				Transact at transact
A laba ma.															1					
Bridgeport	. Jackson	. 660	12								5.€5	+ 0.75	1.70	0	13					R. L. Moore.
Decatur	. Morgan	. 573	30		- 0.4		5	20	14	38	5.99	+ 1.89	1.54	0	14					E. A. Carriger. Robt. E. Cobern.
Florence Guntersville	Lauderdale Marshall		28	41.4	- 1.3	66	3†	17	13	40	6.04		2.05 1.30	0	13					. Prof. Oscar Horton.
Madison	. Madison	. 573	18	39.6	- 2.7	72	4†	18	12†		7.18	+2.53	1.90	0	7	7	11	13	n.	Edward Humphrey.
Riverton	. Colbert	. 360	15 29	39.1	- 1.2 + 1.0 - 0.9	66	5 21	14	13	42	9.33 5.51	+ 3.67 + 1.06	2.00	0	11	9	4	18	w.	Ernie J. Moore, H. A. Caldwell,
Scottsboro L'uscumbia			30	41.8	- 0.9	67	5	23	131			+ 2.85	2.49	0	10					. Samuel Moore.
																			1	
Georgia.	2.0	0.000	-			00		10	1	20	4 61	0.07	1 10	0	10					R. A. Kimzey.
Diamond	. Gilmer	. 2,020	20	42. 4	+ 1.4	66	5	19	14	30	4.01	- 0.97	1.10	0	12					. A. A. Killidey.
North Carolina.	****																			Altonosa Inn
Altapass	. Mitchell	. 2,629	2	42.0	******	70	6	14	14	41	4.83	*******	1.51		13	9	9	13	n.	J. D. Link.
Andrews		. 2,255	33	39.9	+ 2.1	66	5	14	13	33	0.90	- 3.16	0.31	0.3	8	11	7	13	nw.	U. S. Weather Bureau.
Banners Elk	. Avery	. 3,750	4	34.6		62	5	6	25 13†	38	1.52 2.11		0.30	3.0	9 7	13	10	15 11	w.	R. W. Collett.
Blantyre Blowing Rock		4,090	3	40.1 35.8		60	6	7	25	39	2.62		0.70	5.0	7	18	7	6	nw.	Herman S. Deal.
Brevard	. Transylvania	. 2,230			+ 1.4	66	2	11		46		*****				14	14	3	n.	W. E. Breese. D. K. Collins.
Bryson City		2,000	24			****	****	*****		****	3.87	- 0.54	0.75	0	9	****			*****	Frank H. Brown.
Hendersonville	. Henderson	. 2, 167	15		+ 1.9	70	3	11	25	37	3.05	- 2.61	0.65	0	11		4	10	nw.	Dr. L. B. Morse.
Highlands	. Macon	. 3,850	22 14	37.8	+ 2.5 + 0.8	61	6 5	14 15	12†	34	7.11 2.30	+ 0.25	1.70	T.	9	9	8	14	nw.	T. G. Harbison. P. A. Garner.
Hot Springs		1,326	5	38.1		64	5	9	25	43	2.63	******	0.66	3.0	8	8	5	18	w.	Prof. E. J. Johnson.
Marshall	. Madison	1,646	10		+ 2.9	66	31	14	13	34	2.10	-0.88	1.00	0	5					M. L. Church. Miss Victoria Mingus.
Murphy	. Cherokee	. 1,614	36				****	*****		****	4.41	- 0.71 - 1.10	1.12	0	15	100	1 99	10	*****	Barry C. Hawkins.
Rock House	Macon	. 3, 100	20	40 4	+ 0.9	64	6	19	28	35	6.20	→ 1.10	1.40	T.	9 8	10	11 8 0	10	nw.	S. M. Transou.

Table 1.—Climatological data for December, 1912. District No. 3—Continued.

			years.	Temp	erature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeited.	Number of rainy 0	Number of clear days.	Number of part- ly cloudy days.	N umber of cloudy days.	Prevailing wind c	Observers.
Virginia.																				4
acksburg	Montgomery Tazewell Lee Wythe Russell Wythe Washington	2, 170 3, 250 3, 243 2, 028 2, 131 2, 028 1, 350	21 17 9 8 2 16 3	38.4 36.6 35.8	+ 1.4 + 2.4 + 3.7 + 1.0	65 64 64 66 73 70	5† 5 5 5 5 5 5	- 5 11 12 6 6	26 25 12 13 25 25	40 48 23 32 42 40	2.50 2.23 4.90 1.92 1.27 4.40	- 0.12 - 1.56 + 0.44 - 0.69	0.47 0.70 1.30 0.56 0.52 1.00	5.5 2.0 2.0 3.0 4.0 3.0 3.0	9 5 11 11 10 5 10	9 9 10 18 12	7 5 7 5 1 4	15 17 15 13 12 15	W. W. SW. W.	Agrl. Experiment Sta C. H. Greever. Henry Nicoll. Miss Alice G. Jewett. R. D. Swain. James M. Graham. Frank M. Barker.
ountain Lake	Giles Montgomery	4,348 1,773 1,221	3	30.4		63	6	- 6	12	37	2.41 2.34 5.87	+ 1.28	0.70 0.60 1.66	8.0 4.0 2.0	8 11	14		14	0.	H. E. Dorland. Arthur Roberts. Mrs. L. E. Venable.
eers Ferryytheville	Scott Wythe	2,293	16 19	36.4	+ 1.1	66	5	11	26	31	1.61	- 2.13	0.55	5.0	10	13	5	13	w.	U. S. Weather Bureau

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 3, Ohio Valley.

Ctations	Watershed.									-						Day	of m	onth	•				-										7
Stations.	watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
New York.																																	
llegany	Allegheny		. 63				. 50	. 01	. 05		.20		. 15				. 06		. 05	. 25	. 05	. 05		****	.01			.18	.12		. 95		3.
Solivar	do		19	59			33			.05			.05			T.	.11	. 04	****	T.	.15	. 05	.08		. 15	T.		. 15	. 20		.10	.40	2.
700ml			. 10	. 00			. 00										-									-				1			
Pennsylvania.																																	
Jeppo	Ohio		.44		1.00		T.											. 05		.06		·	****		. 34			.32	05			::::	2.
BaldwinBeaver Dam	Ohio Allegheny Ohiodo		26	16			. 60	T.	T.	T.			.01				. 03		T.	.08	. 03		T.		. 20	. 20		. 26	. 05		. 24	. 20	2.
Beaver Falls	do		. 24	.20			.80	T.		. 01							. 05	T.	T.	. 04	. 02		T.		. 25			. 29	. 03		. 30	.18	2.
rookville	Allegheny		. 07	. 02		T	.85											T	.01	T.	.02	****	****	****	. 61	****		.30	. 05				
aliforniaheat Haven	Monongahela do		. 44		T.	.07	. 34			T.			T.				T.			. 15	T.				. 21		T.		T.		. 48		. 2.
larion	Allegheny		. 20	. 25			. 60						. 10				Т.	T.	.25						. 25			. 15	. 10		. 25	. 30	2.
laysvilleonfluence	Allegheny Ohio You'og'ny		06	21		13	27	T	T.	T.			T.				T.		T.	. 36	T.				. 40	T.		.27	. 16		. 22	. 40	0 2
oraopolis			. 23	. 15		T.	1.02	T.	T.	T.							. 02	T.			. 02	****	· · · ·		.38	· · · ·		. 24	. 01		. 25	.22	2 2.
avis Island Dam .	do		. 28	. 13		T.	1.00	T.	T.	. 02			T.		****		. 04	T.	.23	. 09					. 29	T.		. 40	. 04		. 46	. 20	2
										T.									.02	. 03	. 01		T.		. 40			. 03	. 05		. 33	. 21	
man la li m ti li	Allowhone		39	9.4			0.3	1	T	. 03	T		. 02				. 09	T.		. 15	.10	T.	T		.16	T		34	. 05		.40	.43	
reeport	Monongahela		.10	. 24		. 10	. 50										.04			.06	.02				.40			. 60	. 10		. 30	.30	0 2.
reensburg	You'og'nv		. 43			- 07											.03	.01	.10	.05	T.				.45			. 30	T		. 45		3.
reenville	Ohiodo		. 44	.01		1.	.77		.02	T.							. 04	T.	T. T.	. 05	.26	. 02			. 15			. 32	.12	2	. 62		. 2.
ferrs Island Dam	Allegheny		. 25	.12		T.	1.12	T.	T.	. 01			T.				. 03	T.	T.	.32	. 01	****	T.		. 30	T.		24		3		. 23	
ndiana	do		.70			. 02	. 76	.04 T.		T.				****			. 05	T.		T.	T.			.30	T.		. 46)					
ohnstown	Monongahela Allegheny		.45			. 23	. 40	. 01	. 07	. 04			. 01			T.	. 08	. 04	. 20	. 15					. 36	Т.	. 01	. 50	.00	3	. 63	25	
ock No. 4	Monongahela Allegheny		. 22	1 . 21		. 05	. 04			1 .	Inne		11.				1.03	Т.	T. . 21	. 17	Γ.				. 30	Т.						25	. 2
veippus	Ohio		33	. 27	1		1. 135	11.		. 03							. 02	. 01		. 40	T.				. 28	. 03	3	25	. 00	3	. 32	. 09	
arkers Landing .	Allegheny Ohio		- 40	.28	· · · ·		. 92	T.	T.	. 05		т.	. 04				. 04		. 02		. 25	· m		. 09	. 30	. 02	T	. 00	.00	. 03	3 .36	. 24	1 3
ittsburghaegerstown	Allegheny	T.	.31		Τ.	- 84	. 58	.01	. 01	.08		T.	. 05			.01	.08		****	. 21	. 04	T.			.42	.00	3	80					. 2.
altsburg	do		. 20	.11		T.	. 62		. 01	. 05			T.				.04		70	. 26	. 03				. 34	.02	5	30	.10		. 20	.32	
haron	Ohio You'og'ny		71			1.5	43		T	75			T			T.	.02	. 06	T.	. 10	1.		1.		. 75	1.		60			89		. 4.
omerset	Allegheny		. 30	1.10			1.20		. 03	. 02							. 06			. 50	. 02				. 34			30	.07	7	25	. 25	
niontown	Monongahela		. 44			. 10	. 40						. 10						T.	T. . 26		10	****		10		41	. 10	3	. 3.	.46		. 2
VarrenVest Newton	Allegheny You'og'ny		. 10	. 26		T.	. 56	T.	T.	T.			T.				T.	T.	T.						. 60			35	. 03	T.	.30	. 25	
												1			1										1		1	1	1				
Maryland.																									-			1 00			00		. 3.
eer Park	You'og'ny		75			30	. 37			05							. 05											. 1.00					. 3.
Peer Parkrantsville	do		. 26		. 06	.46	. 41			. 04		T.					.07	T.	. 05	. 30					. 70			35	8		. 67		. 3.
West Virginia.				-																								1			1		
	0 17		04	10	12	0.0	45								1				. 03	*	00				65			3!	5	1	. 67		. 2
ancroft	G. Kanawha		. 24	. 10	. 15	. 40	. 40					T.							.00	T.	.02							30)	4	0 1.78	3	. 3
ens Run	Ohio																	03	. 20	. 05					. 35			50	.,		. 72		. 3
nondonville II	G. Kanawha Monong'h'a.		.50		55		.59					1					1 . 10				1111										*	. 85	5 2
uckhannon	L. Kanawha		. 45		. 15	. 30	. 35			T.								. 15	.33	T.				T.	. 50			50			. 60		
airoentral Station	L. Kanawha Mid. Is. Cr'k		.52		. 10	. 16		T		T.		T.								. 02					. 00		. 4	0 .2	5		42		. 2
harleston	Mid. Is. Cr'k G. Kanawha Monong'h'a.		.02	. 25	.22	.33	.30					.02							. 08	. 28	T.				. 56			25	. 00	3	45	.00	6 2 3
heat Bridge	Monong'h'a.		. 11	. 16	. 14	T.	.34			.30				T.		- 04	. 05		.08 .06 .05 .05		. 20			****	.80			. 56			1.6	. 10	. 4
ortland	L. Kanawha		. 48	.21	. 06	. 28	. 48												. 05	. 29	T.				. 47			30	0.00	2	60	.20	0 3
uba	Sand Creek		. 61		.08	. 66											10	. 05	.05	T.					. 50			00	9	0	86	54	4 4
oavis	Monong'h'a. Big Sandy		40		.09	.34	. 21				. 613							. 04		. 09					. 44			61			19.		. 0
lizabeth	L. Kanawha		. 45	.33		. 15	.72												. 04	. 20					. 42			3	T.		0 .24		. 3
lkhorn	Big Sandy Monong'h'a.		26		. 00	.30	. 16		.02	.03	T.	T.				T.	T.	. 63	. 10	. 10				. 10	.37		T.	. 40) T.		73		. 2
airmont []	do		. 14	. 48	.03	. 08	. 46		T.	. 01		T.					. U.3		. 00	. 12	. 02			0000	. 40	4 .		. 1	4 .0	7	26	. 25	
lenville 11	L. Kanawha Monong'h'a.		. 07	. 33	. 05	. 40	. 70		T										. 03	. 30							4	. 1	1 .10	3	. 6	5	. 3
rafton	G. Kanawha		.00				. 25					T.						. 02	.03	.01					. 40		. 0	1 .23	3		72	2	. 1
inton	do			. 10	.04	. 40	. 20		. 10	.02		.02							. 10	.02 T				****	. 58			- 10	3 . 14		64	. 18	8 2
olcombuntington	Ohio		.50	T.	. 12	.22	. 56											T.	.04	. 22					. 40			24	1		68	T.	. 2
ewisburg	G. Kanawha		. 18		. 54	T.	. 35					T.			****			T.	. 13	T.				. 30			2	4 T.			1.04		. 2
	Guyandotte. Monong'h'a.				10	. 55 T.	. 65											T.	. 15	.08	T.				. 45	.0.		. 13	2		91		
adison	G. Kanawha					. 13																											. 3
annington	Monong'h'a. G. Kanawha				. 02	. 13	. 49			T.		. 01					.04	.01	04					60	.37		. 2	34)		1.70	3	. 4
organtown	Monong'h'a.				. 02	. 08	. 39											T.	.27 .09 T.	.11					.30			20)		58	3	. 1
oundsville ew Cumberland	Ohio		.56			T.	. 80	T.	T.				T.				T.	T.	.09	T.								42			50		. 2
ew Cumberland	do		. 54			. 05	.37	1.	T.				1.					.07		T.					. 35			180	1	1	11 16	1	2
uttallburg	G. Kanawha		. 20		.38	. 15			4.		1	3.0		0000	0000		0000		. 10	T.				. 08	1.00			60			. 40	25	. 2
sceola II	Monong'n'a.		35	. 62	.30	. 10	.01	T	T	.05	T					T.			. 22	.00				.08	.22	.00	0	5 .20	3	0	6 .66	3	. 2
arsons	Ohio Monong'h'a.																****																
hilippi	do		.50		.07	. 20	. 56			00					1		002	.03	.12	.26					. 83			- 20	0.00	5	1.96	3	
ickensoint Pleasant	Ohio		. 16	.24	.04	. 84	.54			. 10			1.					. 10	. 06	. 18	T.				.36			2	5		50	. 10	6 2
owellton	G. Kanawha		. 35		. 61	90	11			05					1				. 18	. 10					.71			. 36	3		. 68	5	. 3
rinceton	do		96	10	.25	15.	90					1							.10	1.5	78.			1	. 061			41	A L.		66		0 3
																									. 45	.0	1	. 0	.2	2	30		
	G. Kanawha Ohio		. 45		.17	.24	. 50											.02	. 19	. 05					. 42			3			. 72	.32	3
yan	Ohio		4.4	- com		2.6		1 000							1		0.1		23/4	1313					95			. 54	3				

Table 2 .- Daily precipitation for December, 1912. District No. 3-Continued.

Stations.	Watershed.														1	ay o	f mo	nth.															
Stations.	watersmed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	-
st Virginia—Con.																																	
ra Alta	G. Kanawha Monong'h'a.		.24		. 48	. 27												T.		T.			• • • •					.54	T.		. 26	.32	2
	G. Kanawha			.22	. 11	.30	. 14												. 10	T.					. 20			. 10	.10		. 95	****	1 9
ley Park	do				. 14	. 19	. 40												. 75							. 65							13
bster Springs	Ohio		24				. 80	. 05	T.								T.	T.	. 10	.05			****		.30			.20		****	.38	****	1
ston II	Monong'h'a.		. 13	. 26	. 14	.23	. 44										T.	T.	. 06	. 28	T.				. 50			.30	. 12		. 48	****	1
eeling	Ohio Big Sandy		.22	.12	.30	.74	. 63	Т.	Т.	T.		T.	Т.				Т.	Т.	. 10 . 06 T. . 19	T.	Т.	т.			.30			. 32	. 15		. 28	.20	
Ohio.																																	
esville	Ohio		. 39			.02	.71	T. T.	T.		T.							.04	T.	T.					. 28			. 29			. 75		
ngorvillelefontaine	Muskingum. Great Miami		48	::::		. 24	51		T.			T.				T.	.11	.00	. 26	.13	****	****	****	****	****	****		. 25		****	. 91		
densburg	Muskingum.		.39			T.	. 82		T. T.	T.			T.				T.	T.	.12 T.	T.					.10			.05			. 42		1
liant	Ohio		.47			. 86			T.							T.			T.	T.					. 40					. 60			
izbridge	do Muskingum.		. 58																. 05	.08		• • • •			. 33	****		99			65		
p Dennison	Ohio		. 62			49	.10									****		. 10	.15	. 01					.09			. 21			. 58		
al Dover	Muskingum.		. 50			T.	.51			T.			T.					.03 T.	T.	.10					. 20			. 20			. 70		
	Scioto		.28		06	30	. Ua	****	.01 T				T.			.01	T.	Т.	.06	.00					.08			24					1
licothe	do		. 44			. 02	1.54												.04	.10						. 20		. 35			. 54	.04	1
einnati	Ohio	. 28	. 39			- 200												. 121	. 24					.07			.10						-
leville	Scioto					. 33	1.00	01			T						T	.06							. 20	****	****	40				****	
ımbus	Scioto					. 66	. 01	.01	T.				****			T.		.04	.28	FEE				64			0.8	.08			. 52		
nocton II	Muskingum.		. 95	.10			. 65										. 04	. 02							. 18						. 95		
ton (1)	Great Miami	.12	.30	.10		.44	T.	T.	T. T.									.06	. 29	T.		* * * *		.02	T		.14	.01			. 44		-
ware	Scioto		.52		. 01	.35	.01	T.				T.			T.	.02	.04	T.	. 01								0000	1,30		1.	. 76		
nos	Ohio		. 43			.33	. 40	T.	T.	T.								.04	. 23	. 03	.03				. 35			. 60					-
nison	Muskingum. Scioto	• • • •	. 54		T.	. 83	T. 1.00	T.										.03							.15			. 24 T.			. 67		-
nkfortlipolis II	Ohio			.10		.09	1.00											.10	.03									. 23	3		.57	.12	2
lipolis	Ohio Mahoning	T.	.26	.02			.74		T.	.02						T.	.03	.01	T.	.14								.31			. 76		
nville	Muskingum.		. 50	.07			T.		T.	T.			T.			T.	T.	.08	, 11									. 22					
tiot	Ohio				****	1.07	. 63		T.				.02				T.	.04 T.	.01 T.	T.	****	****		T.	. 40	****		.08 T.			1.33		1
en Hill	Ohio Muskingum.	. 34	.31	T.		. 68	. 24	T.	T.							.01	T.	T.	.01	. 03					.15			. 24	1		. 63		
enville	Great Miami		.36			.30			T.									.09		. 05								T.		T.			
nilton	Ohio			. 66	****	60	.31			****							.12			. 30	****		****	.13	.03	****					. 52	****	
sboro	Scioto							****																									.].
ton	Ohio						.37											. 03	.05	.01					.50			10					1
buck	Scioto Muskingum.		53			. 40							T				T	20		07					.12	****		.30		.90	.01		1
	Little Miami		. 68			T.							1.					.09	T.	. 17					. 03							.01	t
caster	Ohio		. 55			. 60					T.						T.	T.	T.	T.				T.	. 12			.33		T.	.50		-
ietta	Muskingum. Ohio		. 46		T.	. 66	. 40		.02				****				.02	.06		02			T.	.01	.28			.31			00		1
ion	Scioto		.65			.01			T.								.04			. 28								. 10					
ordton	Muskingum.		. 32				. 53		T.								T.	T.	. 10	. 03					.02		···	. 35					-
igan	do Ohio		.70		****		2.00 .85		Tr.	T.			****			m.	T.	.04		. 02	T.	T			16			. 29			00		-
lie	Muskingum.		. 57		****	T.	. 75		T.								. 02			T.				***	. 15			T.			1.90		
v Berlin	do		. 40				. 95										.06	.02		. 10	. 05			****	.05								1
w Waterford o State Univer'y	Ohio Scioto		.42			.48		T.	T.							T	T. T	T.	.20				****		03			T.					
gonia	Little Miami					. 10	. 13																										
gekala '	Muskingum		53			.28	. 53	. 03									. 03	.07		. 03					. 13			.31			. 79		-
bleslo (1)	Muskingum		. 62		T.	1.45	.71	. 03									• • • •	.09	.10	. 10					. 15			T.		****	.87	****	
ua	Ohio Muskingum. Great Miami	.00	.36		A.	1. 40	.62									T.	T.	.06		.38											.37		
tsburg	do		. 44			. 25		T.	T.									T.	. 10	. 10				. 10				- 05	5		. 87		-
tsmouth	Ohio Scioto			.35	. 01	. 14	.80		T.					****				.04	.01	. 04	****	••••		****	. 65			T.					1
ney	Great Miami		. 02			. 38	na		T.										.34									.00			.04		
nerset	Muskingum.		. 54			. 10	. 83	T.									. 03	. 05	. 09	T.					. 15	T.		. 05	T.		. 65		1
ingfield	Great Miami Ohio		. 49			.28	. 09	T.	T.	****		****	****		****		.00	.06	. 14	.03			****	****	.01	****	****	. 24			. 76	****	1
acuse	do	.01	. 43			. 52	.34	1.											.31						.60						. 78		
ırman	do		.41			. 42												T.		T.					. 40					T.	1.38		
0080	Muskingum.		.50			. 62	T.		T.			T.				T.		.03	.01	15				. 17		****	.21	T.	0	T.	. 52		91
ana	Great Miam i Mahoning	T	20			.31 T.	. 04		T.	T		****				.04	****	. 00	.08	.05	T.	T.	.02		.06			. 22	2		. 60	****	
verly	Scioto		. 52			. 28	1.33											. 04	06										2	4 .	. 68		
ynesville	Little Miami		. 68			.30	***		·									T.	.10	.15	****		****	****				.17	0		. 68		
oster	Muskingum. Mahoning		16	.02	****	.30	. 40		I.	T			T.	****			T.	4.	. 12	T.	T.				.09			. 19	9 T.		. 47	.06	
esville	Muskingum.		. 46	.03		T.	.98	T.	T.				T.				T.		. 01	T.	T.				. 20			.30	0 T.				
Indiana.														-											-						1		
ierson	W.F., White		. 26			.10												.10	. 07									.00	3	Т.	. 45		0
icall	Wabash		. 27			. 10	T.	· · · ·		T)								.12		10	T.							T	4		. 20		1
omingtonii	W. F., White Wabash		.50		****	.02	02	T.	T	T.						.05		.02	****	. 10						***	. 05			4	4 . 07		-
ifton]]tlerville	E. F., White		. 51			. 55		T.										.25	. 68					. 12				. 14	5	. T.	1.76		-
nbridge City	Whitewater.		. 26			.04	. 22											.13		.04				****	75	***					58		-
umbus	E. F., White Whitewater.		. 28			12	. 19			****								25	30			1	1						3		58		1
wfordsville	Whitewater. Wabash		.50			T.				****				****				. 16	.00								T.	T.			. 40		
phill	do	T	28	T	T	.07						T.						19		T			1	1	1	1	1	1 08	81		26	T.	
inence	W. F., White		****		· · · ·	. 10		PD.			er.							12	1.				****	90			07	1		- 00	5 .60		-1
ansville	Wabash	T.	.10		r.	T 44		T.		0000	I.							. 15	.04					. 20			T.	.00	2	. T.	.30		
			OF				. 12										. 10			.10								. 06	8		. 40	16	n
est Reserve neh Lick			7 CM			940			1	1	4								7.0														.1

Table 2.—Daily precipitation for December, 1912. District No. 3—Continued.

Stations.	Watershed.					-		1					-]	Day	of m	onth.					,									
57646300355		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Indiana-Contd.																																
reensburg	E. F., White		. 80)		T.															T.	T.		. 05				. 15	
ickory Hill	E. F., White W. F., White		. 49			. 19		. 01										. 23	. 13									01		.02		
untingburg untington			30			- 30	5		T		T	T	****			.03		. 25	T.					. 12		****	T.	0	. 07	.71	40	
dianapolis	W. F., White	. 32	.16		T.	.14	.01	T.	T.		T.	T.						. 13	. 09	T.							. 02	T.		. 35	.21	
Terson ville	Ohio	. 03	.84		T.	. 60	.01	T.	· · · ·		T.							. 22	.20					. 15	. 02		T.	. 01		.12		
dyville komo	Wabash			3			T		T		T.							. 14								****		T.		T. T.	.17	••••
fayette]]	do	T.	. 38		T.	. 03	S		T.		T.							. 14	T.	T.							T.	.04			. 13	
zansport	Wabash	2000			. 03	. 06												. 15										T.				
disonrengo	do																	. 24	. 19			****		.00	.00	****	****	. 33		,20	. 11	
rion	Wabash		. 46			. 04												. 06	T.									. 12		. 03		
nticello!	E. F., White Wabash	T.	. 22			T.	. 07	T.	T.									. 12										T.			.56	
ores Hill	Ohio	1.	. 58			29	25			****								. 20	30						. 10	••••		T.		T.	. 63	
unt Vernon	do		. 15				. 65										. 05	T.	.02						.06			. 0			. 52	
shville	E. F., White		. 38			. 16												. 27	. 05									. 4				
olinoeton	Wabash		.28			33			T	1								. 17	T 14	****				. 10	****			. 08		.03		
hmond	Whitewater.	.08	. 19			. 30	T.		T.									.08	. 22								T.	T.		. 32	. 24	
hester	Wabash		. 38			. 12			T.							T.	T.	. 16									T.			T.	. 32	
ekville	Ohio		35		T	T.			T.		T.																			T.	. 18	
amonia	Wabash		.20			. 18											.05		. 45								.11	. 12		.05	.70	
m	Ohio		. 68			. 51	.06	T.										. 25	. 40					T.	. 20			. 14		.05	.75	
ttsburg	E. F., White		.73			- 73		T.	m	****		****	****		****	****	****	. 20	. 40		****	****		.20	****	****	00			T.	1.00	
lbyville	do		. 35			. 19												. 18	. 21								.01			.02	. 50	
als [do			.36		. 18												. 19	. 07						T.			T.			. 60	
re Hautedersburg	Wabash	. 25	. 35			.01			T.		T.							. 16										T.			.04	
ay	Ohio		.50			. 90			1.									. 10	T.	****				.30		****	25	.00			.50	
cennes	Wabash		.10			. 25	.18			T.								. 10		T.								T.			. 60	
shington	W. F., White		. 24			. 27	00		770			TD.		****				.18												. 10		.02
nona Lake	Wabash	.02	. 53		.02	. 13	. 02		T.			T.	T.			T.		. 16		.01		****	****					T.		T.	. 33	
rthington	W. F., White	T.	. 28			. 19												.20	.03								T.	.0		an		
Illinois.				1																									1			
Introop.																																
ion	Wabash		. 32		70				T.									. 20	T.								T.			.17	.40	
rleston	do	. 48	.48		T.	.01				****		****	****	****				.18		****	****	****	****	****	****		.04				.14	
ville	do	T.	. 48			. 05	T.		T.	T.	T.							. 11	T.	T.							. 04	T.		.01	.10	
ality	Ohio	T.	.23			.30												.02	T.					. 30	· · · · ·		. 05	5		.03		
rfield	Wabash	T.	34			.12 T		T.	****	****				****		****	****	.20	****	Т.		****	****	. 08	T.	****	T.			.07	. 44	
conda	Ohio	T.	. 29			.81								****				.09						. 34						.21	. 55	
peston	Wabash		. 30			.04			T.		T.							. 16		.01	****						T.	T.			. 15	
ropolis	Ohiodo	.32				50		T.					****					.06	T.		m.		T.	T.							.20	
atrose	Wabash				****	.04		T.	T.	****	****	****		****	****		****	.16	T.	****	1.		т.	.00			. 02	T.			.07	
int Carmel	do		.14			. 04	.14	T.										. 20		T.		1			T.			T.			. 58	
w Burnside	00	T.	. 36		****	.20												T.	T.					. 18	T.		.02	T.		.21		
ey İ	do					1.			****	****			****	****	****		****													.01	. 14	
estine		.01	. 53			.06													T.									. 03	1	.08		
is][lo	do	12	. 34		T.	.08				****				****	****		****	.11	****	****	****	****					T	T.		.06	.15	
atoul	do	.03	. 28		T.	.03			T.		****		****	****			****	.32	T.	****							T. T.	T.		T.	.09	
yville	Ohio	. 90	.16		T.	. 10	:											. 60						. 05			T.			. 21		
wneetown][Wabash	05	. 16		****	.01	.37		T.			T.						.10	T.					****	. 40	****	T.	T.		.03		
ana	do									****	****			****	****		T.	. 24		****			****				T.					
	-																															
Kentucky.																																
ha	Cumberland. Ohio		.72		.85	.78					T.	T.						. 45	T.	T.				T.			1.10			1.01	70	
dstown	Salt		. 83		T.	25	1.28			****		.05						.10	.08	.15				. 10	.70		. 22	2		1.	.74	
ttyville	Kentucky		.72	.14	.34	.54	1.34					T.						.18	.10	. 20					. 66			. 18		.12	. 80	.12
ver Dam	Groon	- 1	779		1	10	771	1										10		91					AR						. 05	
ndville	Kentucky Mississippi Green Cumberland. Green Big Sandy	.05	. 22		. 60	55	T. 18		****	****	т.		****					.02	.02	****				.52	. 90		.05			45	1.33	****
ling Green	Green		. 85		. 05	. 65	1.35					T.							. 15	. 20	.11				. 83			. 08			. 65	
nside	Cumberland.	****	.60		. 42	. 86	.80				****	.18				****		.12	.10	.14					.50			.32			.82	
ettsburg	Big Sandy	****	. 40	19	.03	20	00	.04	****	****	. 02			****		****	****	.08	.05	. 24	****	****		. 20	. 20		T.	10	04	.27	. 57	10
																									. 01			.21				. 52
nonton	do		1.09		1.20	1.60	.39											.27	. 13				, 25	. 30			.27				. 89	
ank nouth	Cumberland.	****	.80		. 52	1.60	1 20		T.			.03						.10	.12	.10					.40			***			. 85	
akfort	Kentucky			. 80			.03	1.40				T.						.10	.05	.11											. 61	
ıklin	Green		1.40		1.15	2.13					T.	T.						. 24	.40					. 22	.31			.26		T.	.70	
ensburg	do		.01		.10	.90	2.00					.15						. 28	.03	.15					.42			. 24			. 85	
h Bridge	Cumberland		. 70		1.5	. 65	1.40				m							.09	.01	.07				25	.00			15		.12	. 68	
ngton	Kentucky Cumberland.		1.25		T.	.58		T.			T.							. 32	. 25					.19			.04	.19		.10	. 65	
cnneid	Green	-	1.00		4	1.10					. 02					!		.11	. 15					. 40			. 15				.80	
ington	Kentucky Salt	.11	.39		.16	1.38		T.	T.		T.							.08	.09	T.				.51	.05		.16	.01		. 22 T.	. 50	
ien	Rig Sandy		65		16	92	40	1									- 1	.04	.05	.20				.14	, 60		,26	1.			.75	
isville	Ohio	. 26	. 52		T.	. 59		T.			T.							. 23	.14					.19			.03			.56	T.	
isvillesville[[do	T.	. 58		T.	. 87	1 10	T.	773		T.							T.	T.					. 40	.10		.40	.30		.15	.70	
dlesboro	Cumberland.		.52	.04	1.35	1.30	.32		T.									.09		.00				.44	.38			. 18			.87	T.
int Sterling	Licking		.80	-06	.02	. 24	1.52					T						.04	.18	T.					. 80			.32			. 90	T.
nsboro	Ohio		.11			. 50	1.00	T.				T.						.50 T.		T.					. 50						.40	
nee b f f																												1			.76	

Table 2.—Daily precipitation for December, 1912. District No. 3—Continued.

		-													D	ау о	f mo	nth.															-1
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Tentucky-Contd.																															-		0.0
chmond	Kentucky		. 76		.12	. 15	1.66			70		Т.						.08 .22 .17		.10					. 42 .			.18	****		.75		3.3
Johnott	Salt Licking		.85			.60	.08	T.										.17	15	01	120			T.	.70			.30		T.	. 65		2.9 5.0
elby City	Kentucky		.70	: 10	. 52	.80	.28	т.										.10	T.	.34					.45 .			.10			.78		4.6
elbyville	Saltdo Cumberland.		.75	1.10	.07	.72	.13	T.			.01							.12	.13	T.				.10	.16 .			.18		.03	.67		3.0
illiamsburg	Cumberland. Licking		.54	.08	. 95	. 62	.72		T.			.05							.14	.10					20			. 15			. 55		2.5
Tennessee.	Licking		.00		****	.01																				-							
	Tennessee		. 83	1.20	1.00							. 15						.30	20				T.	.85	.05 .			.20		.14	.30		5.0
nton	do		.24	18	.73	1.53	.10		****	.06	.03	.02						. 23	.04	1					.50			.43			.39		2.4
												19						26	15	T				.05	. 10 .	***		. 20		. 85	.53		4.2
																									. 86 .						. 83		5.7
											T.	.30												. 40	.20 .	***	Т.	.22		.03	. 88		5.0
lina arleston attanooga	Tennessee		.90	.24	2.30	. 45	1.55			T.															. 80 .			.16			1.10		7.7
attanooga	do	.06	.42	.06	2.45	1.55		.01	.02		70							. 64	.01				****		.30		.04	.10		. 20	. 64		5.2
arksvilleinton		.10	.75	.12	1.73	. 45	1.30		****		1.	. 05							L. UU	1.							96	.20			1.00 1.15		6.8
ossville	do	.01	.43	T.	1.73	1.87	.04		T.	.01		0.8		P. 17-1				- (50)	.07	Т.			.03		. 68 .		.26				.90		4.3
ndridge	do	T.	.02	.02	1.10	2.00	.04		.10	.02	T.	.09						.56	.27	.03		T.									1.08		7.3
caturckson	Cumberland.		1.61		. 04	1.74	.21					.11					****	T	-52					55			.49			. 60			3.8
ver	00	1.	. 10		1 75	1 55	06		0.5	03	*.	10						. 60	.02				. 05	.50	90	25		.35	.05	.05	.88		6.3
inlapizabethton	do	/D		.07	1.50	1 00	.01			.07	T.			.00				.50	.01	.06		T.		. 76	.22					. 28	.87		5.6
asmus	Cumberland.	T.	.43		.86	1.4					T.							1.40	.03					.70	.20			. 55		.70	64		5.3
anklin	do		1.40		1.18	1.09	1 86					.05						.30	T.	. 20				. 20	.98						.93		6.
																								.10	40			24		12	. 68		8.
arriman ohenwald on City ferson City hnson City hnsonville ingston oxville swisburg omylle	do	1.68			1.09	2.19			TD.			.21 T						.11					1	25						T.	1.14		6.
on City	do		1.40		1.30	.7	1 .13	3	1.	.03		.03						.13	.18					. 38	.18			. 23			1.07		4.
nson City	do		.10	. 15	.40	.0	.04			.01		08	****					.20	.37					.38	. 33		T.	.21		.10	.50		4.
nnsonville	do	Т.	1.07	25	1.80	1.0	1.4	2				.09	T.																	17	1.11		7. 6.
oxville	do		.27	T.	2.01	1.3	T.		. 03		-m	.04						36	13	i dir			T.	. 35251	- 40	- 81				T.	1.00		5.
banon	. Cumberland	• • • • • •	74		1. 15	1.1	7 .0	1	T.		T.	.16						.50	.21					1.00			.23			.22	. 90		6.
udon	do		. 13	3 .30	1.91	.4	6 1.4	1		T.	T.	.09						.44	1		+		1	0.6	1			2000		-07	1.43		5.
nnville													1.					****	. 60	.09					. 97			.21			1.12		6.
Minnville	. Cumberland		3	5	1.60	.8	5				70							.47		1	1	1			96							1.43	6.
aryvilleountain City	. Tennessee		. 4	9 .9	1.50	1.8	8				1.													05				. 20	R . IU		. 26		5.
ashville	Cumberland	4	1 . 50	0 .14	1.14	1.2	0			96	. 03	.05						. 24	15	7 75					- 65%			11. 13			1 × 424	. 20	3.
ewport ew River	. Tennessee																	. 18	. 21	T.		· · · ·		1 10	. 65			. 22		.45	.72	Т.	6.
almetto	. Tennessee			2	. 1.1	. 9	£		54	5						1		. 35	. 30			1.		1.10				.10	5	17			6.
erryvilleinewood						31.6														9 .05									T.		.90	.14	4.
ogersville	do		0	2 .3	6 1. 0	5 .4	1 .4	2		. 0		. 05	T.					. 53	T	1.15	2			. 34	. 30		. 46						6.
ugby	. Cumberland Tennessee.	. T.	2.5	5	7	71.7	7					. 21						40	N O	K.			. 05	1.281	. 39	****		. 10	2	-10	. 9		8.
vierville	do		1	7	1.2	0 .3	4			0							-			-1				. 48				***			. 6	3	4.
wanee	Cumberland		. 5	5	1. 2	8. 0	0 T		. T.		T.	T.							.10											16	8 K	7	3.
oringville	Tennessee.	1	1.1	11	4	0 . 6	1	5	0	3				1				. 13	. 8	7 .1	5				.86			.3	3		1.0	5	7.
azewell	do						7			.0	7 T.	. 12						5	0.0	2 T.			Т.	. 59	1.20			.3	8	· UR	1.0	1	6
alling	. Cumberland		. 1.0	2 .1	5	1.6	0 .4	8	· m		T.	20			1:::	1				0.0									5	18	3 .5	5	8
aynesboroildersville		T	1.2	1	. 2	61.0	0					. 12						/ID	1 4	E.1		1		. 2411	. 211		1		Ulana		B + + +		4 .
orsham	Cumberland	1.5	0	2	6 .5	41.7			· 'm		1.1.							5	2				1.00							2	5 .9	6	6
nkon	Tennessee	T	.8		1.8		****		1.		1	- 24	-	1	1			1															
Alabama.																		1		1				.06	. 63			.1	3	9	0		. 5
ridgeport,	. Tennessee.		3	1 .3	51.7	0 .3	16 . 6	0				115	0.0					1	7 .2	1			. 25	. 65				2	S		. L. U	S	. 0
ecatur [[do		1.0	8	. 2.0	5	73 1. 2	20	i	0 .1	0	2	1					5	5						.75			2	U		0	4	. 6
ridgeport,	do		3	0 0	14 .6	21.3	30 .8	14 T		1	0	.0	.2	0		1	: :::	5	0					. 25	. 65	S			1 70		12 3	4	1 7
adison	do		2.0	0	7	51.	6 1.	3		0	8	2	0					4						. 66	. 91				0	T		6	
iverton eottsboro	do	Т	1.5	22 T	1.4	71.	0£ .0 53 .8	13 T		0	5 T.													. 60				2	1		0	6	13
Georgia.																			1		1												
iamond	Tennessee.	т		04 . (02 .2	22 1.	10 .:	18 .	01			0	2			-		4	0 .3	36		Т	т.	.14	T.			2	22		1	n	
North Carolina.						-																						-					
ltapass	Tennessee.																		3 .	18				2 .5	5 .0	5		1	36			88	
ndrews	do			38		31 1.	51 .	06	T			T.0						T	T	T			. T.	.0	7 T.			2 .	07	(01 .	88 19	
sheville anners Elk	do		-	19																15 T			. 10	0 .3	5	2	10	M				09	
																										4			33			75	
Blowing Rock Brevard	do			12 .	40 .	30 .	42 .	50										** **		*1												55	-
ullownee			** **	::		200	00	94			01	1	10							07		** **		3	0			98		** **	1	70	1
lighlands	do		1.		** 4.	10	40	201.		** **	90	1	MR.						06	60	05			2	7 .1	0			04			70 46 34	
Iot Springs efferson farshall	do			08		48	40					' m			**			1 19		11 7	7			1 3	OT		1	1881				40	

Table 2.—Daily precipitation for December, 1912. District No. 3—Continued.

]	Day	of m	onth															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
North Carolina— Continued.																																	
furphy	Tennessee		.13		.19			T.		. 02	T	. 09						. 15		. 02		т.	T.				.38	. 34			. 60	. 04	4.
Transon	Gt. Kanawha Tennessee		.14		. 22	. 21	.12			****	T.					****	* * * *							T.			. 20	. 19		T.			2.
Virginia.								-																									
Blacksburg Burkes Garden	Kanawha Tennessee		. 12		. 30	. 24						T.			***			T.	. 30	. 12 T.				. 45 T.	.30		(TS)						2.
elk Knob	do		. 51		1.30			T.										.17	. 40					.10			1.	. 23			1.07		4.
vanhoe	Kanawha		T.	. 08	. 20	.14	. 56						. 05						. 03						. 45	T.			T.		. 20	. 10	1.
lax Meadows	Tennessee		.10		.17	1.00				T.			. 20						15	T.				. 40	. 57			T.	30		. 30	20	1.
ountain Lake	Kanawha		. 20																. 20				****	. 60	1		.01	.30	. 00		.70	. 20	2
adford	do			. 60	. 50	.10	. 16												T.	. 12					. 46				. 10		. 30	T.	2
peers Ferry II	Tennessee				1.10	1.66						.10							. 40						. 20	1						. 22	5
Vytheville	Kanawha		. 00		. 45	.06				T.		T.						. 02	T.	T.				. 47	. 08		. 03	. 05		. 05	. 31		1

* Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 3.

		Penns	ylvani	a.							. We	st Vir	ginia.											Ohio).			
Pate.	Green	wille.	Pitts	burgh.	Charl	eston.	Eik	horn.	Elk	ins.	Glen	ville.	Hun	ting- ı.§§	Mor		Pari	kers-	Whe		Cant	on.§§	Cinei	nnati.	Colum	nbus.	Day	ton.
	Max.	Min.	Max.	Min																								
1 2 3 4 5	53 58 39 54 57	21 37 35 29 31	56 60 42 55 60	34 40 36 36 48	64 65 66 58 74	32 42 40 42 52	59 65 64 63 70	31 32 38 37 41	57 59 57 54 71	23 40 33 33 48	68 62 59 56 76	23 40 40 32 49	63 62 54 55 71	28 34 40 40 42	59 58 56 54 67	30 50 34 34 47	62 61 53 56 67	30 42 38 37 51	57 63 44 55 69	26 27 39 32 36	56 56 38 55 58	26 36 32 31 34	64 58 49 57 65	41 38 38 39 32	58 57 44 53 61	39 38 36 37 50	59 55 43 56 62	4 3 3 3 4
6 7 8 9	61 39 37 27 43	32 29 17 17 24	62 37 38 26 45	34 29 18 14 24	69 60 46 34 51	57 33 32 20 21	58 46 58 48	27	65 42 42 28 51	39 26 22 14 14	70 55 50 40 52	54 30 25 15 15	63 42 47 32 48	51 32 30 20 20	64 57 40 38 45	55 32 29 13 22	65 41 41 30 48	34 32 25 16 26	59 42 40 31 46	40 32 29 15 15	59 39 35 28 41	29 28 16 11 23	61 42 40 33 43	30 31 23 18 28	59 38 38 29 41	27 27 16 14 23	60 40 37 28 41	2 2 2 1 2
11 12 13 14 15	40 21 33 44 46	16 11 8 21 22	40 22 33 45 50	22 12 13 29 34	51 44 40 50 52	40 15 14 18 25	47 40 40 49 52	36	36 25 40 48 55	25 11 8 23 15	50 40 41 53 58	27 13 7 17 15	43 25 37 47 54	28 17 14 17 23	46 37 34 45 52	35 11 9 21 30	44 24 37 47 54	24 14 13 30 25	39 24 35 48 48	29 13 13 18 22	38 18 34 43 46	15 9 10 24 28	36 23 43 49 54	19 13 15 29 34	36 20 39 46 50	15 10 13 26 21	34 19 40 46 50	1 2 3
16 17 18 19	42 47 48 34 36	33 33 28 25 24	50 50 34 39	35 37 34 26 27	55 51 59 56 50	27 33 45 25 28	60 59 62 60 45	29 34 22	42 49 58 36 42	29 26 36 25 20	60 50 57 50 50	16 26 41 28 20	49 53 55 35 48	28 28 35 32 27	49 49 58 52 41	37 35 42 25 24	48 53 55 36 47	37 32 34 29 27	51 49 47 39 44	23 25 33 28 28	40 46 46 31 38	36 34 31 25 24	50 56 41 34 47	30 41 31 28 30	45 47 45 30 42	38 36 29 26 28	46 53 40 28 41	3 4 2 2 2 2 2
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Table 3.—Maximum and minimum temperatures for December, 1912. District No. 3—Continued.

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46 34 35 36 41 32 43 32 43 32 54 25 30 30 30 30 36 29 55 30 46 34 35 36 41 32 43 32 54 33 57 22 54 36 32 54 42 56 26 44 30 59 46 55 47 39 30 36 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 40 32 51 32 43 49 31 49 25 50 27 54 36 40 20 49 32 54 33 25 54 28 36 29 36 50 33 55 37 39 30 36 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 50 33 55 37 39 30 36 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 52 30 36 22 47 31 57 24 51 35 50 15 48 24 36 52 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 25 30 36 29 55 30 46 34 35 36 41 32 43 32 54 28 36 29 40 29 36 28 36 22 44 27 45 13 57 24 51 25 50 20 48 24 47 21 51 22 44 27 45 13 57 24 51 25 50 20 48 24 47 21 51 22 44 27 45 13 57 24 51 25 50 20 48 24 47 21 51 22 46 37 47 31 36 33 36 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 42 26 47 30 53 38 52 27 51 25 48 33 34 42 26 47 30 53 38 52 36 38 52 27 51 25 48 33 34 42 26 47 30 53 38 52 36 36 38 30 44 34 33 34 44 35 31 44 35 31 44 35 31 44 35 31 44 35 31 44 35 31	65	65	65	65	65	65	65 54 72 41 08 53 67 59 70 49 66 54 66 62 66 60 68 48 65 53 67 57 66 62 42 32 32 59 52 67 59 68 53 67 551 70 48 62 49 42 44 33 49 35 59 35 44 52 42 42 49 42 44 33 49 35 59 35 47 35 56 42 57 41 25 41 25 43 27 39 28 38 29 36 22 42 22 42 23 42 23 42 20 43 20 33 24 37 41 28 46 12 48 18 46 28 45 21 46 24 42 26 42 24 43 30 43 20 43 26 47 37 42 10 41 11 45 23 43 14 42 18 41 16 44 14 14 11 24 15 12 48 11 14 47 25 23 43 14 14 42 18 41 16 44 14 14 11 12 45 12 42 21 49 30 52 13 14 26 12 13 13 35 23 30 20 32 21 18 51 22 14 10 41 11 47 25 34 43 11 44 21 18 41 16 44 14 14 11 12 45 12 42 21 48 18 46 12 30 48 31 32 35 38 39 30 52 13 42 31 30 35 23 30 20 32 21 30 20 33 31 19 36 19 33 20 33 25 35 34 49 30 52 13 42 11 47 25 50 15 48 21 49 23 51 21 49 16 52 18 50 20 49 54 37 57 21 62 12 58 28 52 18 55 25 59 31 58 26 57 22 60 25 59 21 54 33 30 36 29 55 30 46 34 35 30 44 35 30 44 35 40 59 49 30 52 13 42 11 47 25 50 15 48 21 49 23 51 21 49 16 52 18 50 20 49 54 37 57 21 62 12 58 28 52 18 55 25 59 31 58 26 57 22 60 25 59 21 55 30 44 33 44 42 56 44 33 44 35 47 35 63 43 00 38 60 40 50 49 32 54 36 52 30 52 26 55 30 52 28 48 38 23 46 12 47 35 63 43 00 38 60 40 50 49 32 54 36 52 30 52 26 55 30 52 28 48 36 29 55 30 46 34 35 30 40 56 49 57 59 28 61 27 60 22 59 26 60 27 59 26 48 36 49 31 49 25 50 27 54 36 40 20 49 32 54 36 52 30 52 26 55 30 52 28 48 36 27 36 15 50 27 54 36 40 20 49 32 54 36 52 30 52 26 55 30 52 28 48 36 27 36 15 50 27 54 36 40 20 49 32 54 36 52 30 52 26 55 30 52 28 48 36 27 36 15 50 24 51 25 50 20 48 24 47 21 51 22 53 18 50 20 52 23 48 46 30 44 13 47 35 63 33 62 21 45 53 30 46 32 44 45 22 44 47 21 51 22 53 18 50 20 52 23 48 44 27 45 13 47 48 13 46 24 46 28 36 49 31 49 25 50 27 54 36 40 20 49 32 54 36 52 30 52 26 55 30 52 28 48 36 27 36 15 50 24 55 31 40 25 44 52 54 52 28 30 35 52 30 52 28 48 36 27 36 15 50 24 55 18 36 31 35 24 36 29 37 30 46 32 47 45 31 40 22 54 48 30 44 44 14 41 41 41 41 41 41 41 41 41 41	65 54 72 41 68 53 67 59 70 49 66 54 66 62 66 60 68 48 65 53 67 57 66 57 66 57 62 32 32 59 52 67 59 68 53 67 51 70 48 62 35 65 45 66 49 61 41 65 60 66 65 42 44 32 44 32 46 32 44 30 48 30 52 37 48 33 47 33 46 27 46 29 46 26 46 20 50 32 52 36 41 23 41 25 43 27 39 28 38 29 36 22 42 22 42 23 42 25 41 20 38 24 37 22 41 25 43 27 39 28 38 29 36 22 42 24 23 30 43 20 43 26 47 22 37 20 40 24 40 25 43 33 33 38 20 43 32 40 30 41 33 47 21 41 33 44 28 41 35 25 14 26 12 31 13 35 23 30 20 32 21 30 20 33 19 36 12 41 11 45 23 43 11 42 48 18 46 28 45 21 46 24 42 18 41 16 44 11 12 45 12 42 21 44 14 14 19 30 52 13 42 21 44 14 14 47 25 50 15 48 21 49 23 51 21 49 23 51 21 49 16 52 18 50 20 49 19 54 37 57 21 62 12 58 28 52 18 55 25 50 31 54 21 49 23 51 21 49 16 52 18 50 20 49 19 54 37 57 21 62 12 58 28 52 18 55 25 50 31 54 23 49 31 49 25 50 27 54 36 40 20 49 32 54 33 36 20 49 32 54 37 32 54 31 49 25 50 27 54 36 40 20 49 32 54 37 32 54 31 49 25 50 27 54 36 40 20 49 32 54 37 32 55 34 40 30 48 33 44 46 20 49 30 52 43 45 45 22 55 30 45 42 56 50 20 49 19 54 37 57 21 62 12 58 28 52 18 55 25 50 31 54 42 21 44 14 41 12 45 12 42 21 44 14 41 41 41 41 41 41 41 41 41 41 41	65 54 72 41 68 53 67 59 70 49 66 54 66 62 66 60 68 48 65 53 67 57 66 57 65 62 32 59 52 67 59 68 53 67 57 48 33 47 33 46 27 46 29 46 26 46 20 50 32 52 36 48 33 19 36 12 41 25 43 27 39 28 38 29 36 22 42 23 42 24 43 30 43 20 43 26 47 22 48 41 26 42 42 42 42 42 42 42 42 42 42 42 42 42	65 54 72 41 68 53 67 59 70 49 66 54 66 62 66 60 68 48 65 53 67 57 66 57 65 47 62 32 55 58 52 67 59 52 67 59 68 53 67 57 65 50 44 52 57 42 59 38 42 46 39 50 31 55 44 52 49 49 42 44 33 49 35 59 35 47 35 56 42 57 42 50 38 44 30 48 30 48 30 52 37 48 33 47 33 46 27 46 29 46 26 46 26 50 32 52 36 48 33 31 28 40 30 41 28 46 12 48 18 46 28 45 21 46 24 42 26 42 24 43 30 43 20 43 26 47 22 48 18 37 25 41 20 38 24 47 22 48 18 46 26 46 26 46 26 50 38 24 52 36 48 33 31 1 4 42 26 47 42 26 42 24 43 30 43 20 43 26 47 22 48 18 37 25 36 28 38 38 39 30 36 17 42 31 13 35 23 30 20 30 32 21 30 20 33 31 9 36 19 41 33 44 28 41 35 41 35 41 35 41 35 41 36 37 57 21 62 11 25 88 28 52 18 55 25 59 31 58 26 57 22 60 25 59 21 54 21 56 16 51 31 35 52 36 48 30 38 60 40 59 30 36 29 36 36 29 36 36 29 36 36 36 37 57 21 62 11 25 88 28 52 18 55 25 59 31 58 26 57 22 60 25 59 21 54 21 56 16 39 30 36 29 37 36 38 34 36 38 60 40 59 30 36 29 37 36 37 56 31 49 25 30 32 23 30 38 30 40 30 40 30 41 12 49 16 52 18 50 20 49 19 50 20 31 36 39 30 36 29 37 32 38 34 34 48 31 44 42 18 41 16 44 14 41 12 45 12 44 14 41 19 49 30 36 36 29 35 36 48 36 38 30 40 38 60 40 59 38 36 36 37 57 22 60 25 59 21 54 21 56 16 50 60 60 27 59 33 52 30 60 22 57 31 36 30 36 29 35 30 36 29 35 30 36 29 35 30 36 29 35 30 36 29 35 30 36 29 35 30 36 29 35 30 36 29 35 30 36 36 39 35 30 36	65 54 72 41 68 53 67 59 70 49 66 54 66 62 66 60 68 48 65 53 67 57 66 57 65 47 66 62 32 55 55 53 67 57 57 66 57 65 47 66 62 32 55 54 39 52 67 59 68 53 67 51 70 48 62 33 69 35 65 45 69 49 61 41 65 60 66 52 65 50 64 42 25 44 30 48 30 52 37 48 33 47 33 46 27 46 29 46 26 46 26 50 32 55 47 22 36 48 33 49 35 47 35 48 48 48 48 48 48 48 48 48 48 48 48 48

*, b, e, etc., indicate, respectively, 1, 2, 3 etc., days missing from the record.

\$\frac{1}{2}\$ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. Cox, District Editor.

GENERAL SUMMARY.

In the Lake Region the month was mild and pleasant, with abundant sunshine and low humidity for the season. Precipitation was comparatively frequent, but the falls were not heavy at any time, and conditions were in general favorable for outdoor work so far as stress of weather was concerned. Insufficiency of snowfall in Michigan interfered somewhat with logging, but in the extreme western Lake Superior region the amount of snowfall was greater than usual, and, coming as it did after the surface ground had frozen, afforded the best of roads for the operation of this industry. Severe gales were infrequent, although delays to navigation were occasioned on several dates by strong winds. The wind movement was above the December normal in practically all portions of the district. The maximum velocities of the month were reported generally as occurring during the latter part of the first decade.

The following table summarizes the chief features of meteorological interest in the various portions of the

	are.		Se.	don.		itation s.		r more.		mbe ays-		direc-
Portions of States.	Mean temperature.	Departure.	Mean daily range.	Mean precipitation.	Departure.	Greatest precipitation in 24 hours.	Mean snowfall.	With 0.01 inch or more.	Clear.	Partly cloudy.	Cloudy.	Prevailing wind
Minnesota Wisconsin Illinois Indiana Upper Michigan Ohio Pennsylvania New York Vermont	17. 7 26. 3 33. 2 32. 6 23. 1 30. 5 32. 9 34. 5 30. 4 28. 4	+3.0 +4.8 +4.1 +5.7 +3.5 +4.1 +3.3 +2.8 +5.9 +5.9	17. 4 14. 7 14. 1 14: 6 13. 2 12. 4 14. 3 11. 8 13. 7 16. 8	1. 32 1. 77 1. 02 1. 10 2. 26 1. 41 1. 82 2. 59 2. 24 2. 10	+0.08 +0.14 -0.87 -1.23 +0.17 -0.82 -0.84 -0.47 -0.82 -0.33	1. 25 1. 58 0. 56 0. 60 1. 10 1. 87 0. 95 0. 71 2. 06 0. 98	11.9 6.0 0.2 0.5 13.7 4.3 4.9 10.9 11.2 5.8	8 7 6 6 12 9 8 13 12 9	8 13 12 11 6 7 9 2 7	9 6 5 8 5 7 7 9 9	14 12 14 12 20 17 15 20 15 17	SW. SW. SW. SW. SW. SW. SW. SW.

TEMPERATURE.

Mean temperatures were above normal by from 3° to 6° in all portions of the district, the excess being greatest over the extreme eastern sections and to the south and west of Lake Michigan. As a whole, temperatures of the month showed a remarkably small diurnal range, the degree of oscillation being such as ordinarily occurs during the summer months. Mean daily ranges averaged but 12.4° over the Lower Michigan Peninsula, thence increasing slightly in all directions to the limits of the district, although not exceeding 16° in any portion except in the Minnesota and Vermont sections. The absolute range for the Lake Region was 90°, the highest recorded being 66°, at Keene Valley, N. Y., on the 6th, and the lowest, -24°, at Virginia, Minn., on the 22d.

There was but little cold weather in any portion of the district during December, and no temperatures of exceptional severity were recorded. The 8th-9th, 11th-13th, 21st-23d marked the only periods during which the readings fell below the seasonal normal over any considerable area. Over the New York and Vermont sections the coldest weather of the month was experienced on the 9th, and to the west of Lake Superior the 22d was the coldest day, but elsewhere most stations recorded the minimum temperature on the 12th, with daily departures of from -15° to -20° .

While the mean temperature of the month has been exceeded in former years, December just passed will be remembered chiefly because of the unusual persistency of warm and pleasant weather, due to the remarkable prevalence of low atmospheric pressure along the northern boundary of the country with high pressures to the southward. As a rule, throughout the district there were 20 days or more that may be characterized either as mild or warm for the season. The highest temperatures were recorded on the 5th-6th generally; yet, considering the gradually decreasing values of the normal through the month, the warmest period really occurred on the last two days, when departures of from +12° to +22° were general.

PRECIPITATION.

Except near the middle and western Lake Superior region, the precipitation of the month was deficient, the departures, however, averaging less than 1 inch, except over northern Indiana. Only a few stations reported 24 hour falls of more than 1 inch, and usually the greatest amounts in this period were considerably less. Notwithstanding the small totals for the month, precipitation in some amount occurred frequently, although there were many days on which the measurements showed less than 0.01 inch.

Snow.—Over the Minnesota section, and in the colder portions of New York State, the precipitation was nearly all in the form of snow, but in the latter section the depth on the ground was no greater at the end of the month than at the beginning, and at some places it was even less. The snowfall for the month was least over the extreme southwestern sections, where the average was under 1 inch, and it was below the monthly norm 1 generally, except over the western Lake Superior region, where the fall was heavy. At the end of the month from 6 to 15 inches on the ground were reported from the Lake Superior shore; elsewhere, with the exception of the highlands of the eastern portions of the district, there was but little snow on the ground, and in the southern sections the ground was bare.

ICE AND NAVIGATION.

Owing to the high temperatures of the month, less ice occurred in the Great Lakes than usual; the lower lakes and the southern portions of Lakes Michigan and Huron

being comparatively free. In the northern portions of Michigan and Huron ice from 1 to 4 inches thick was reported at the end of the month. In Lake Superior only floating and shore ice was observed at Sault Ste. Marie, and comparatively little over the lake generally. At Duluth by the end of the month the harbor was covered by ice ranging from 7 to 17 inches in thickness.

The display of storm warnings by the Weather Bureau was discontinued for the season on all of the Great Lakes after December 14. General navigation was reported closed as follows: Duluth, 10th; Sault Ste. Marie, 19th; Escanaba, 11th; Alpena, 22d; Detroit, 5th. Local navigation will be maintained as long as possible at Duluth, as well as at the several other ports where it is customary.

DECEMBER LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan and Huron.	Lake Erie.	Lake Ontario.
Above tidewater at New York	Feet. 602.11	Feet. 580. 23	Feet. 571.47	Feet. 246, 11
Above or below: Stage of November, 1912 Stage of November, 1911 Mean stage of November last 10 years	+0.21	-0.20 +0.82 +0.07	-0.43 $+0.05$ -0.25	+0.03 +1.48 +0.71
Highest recorded stage Lowest recorded stage Probable change during January	-1.02 + 0.91	-2.35 +1.23 -0.10	$-2.06 + 0.61 \\ 0.00$	-1.50 +2.68 0.00

SUMMARY OF THE YEAR 1912.

Following the warm December of 1911, January, February, and March, 1912, were in the Lake region marked by such low temperatures as in many localities to break all former records for sustained severe weather, although the absolute minimums did not, as a rule, fall as low as in previous years. The snowfall for this quarter was generally above the average, especially in the southwestern portions of the district, and the ground was for the most part covered throughout this time. Ice in the Lakes was of greater thickness and extent than usual, and the opening of navigation in the spring was in conse-

quence delayed because of the late breaking up of the fields.

Beginning with April the weather moderated rapidly, and it and the following month were marked by mild temperatures. In June, however, several periods of sharp weather occurred, causing frost in portions of the northern and the highland sections of the district. The summer period was one of high humidity, which caused pronounced sultriness in spite of temperatures generally near or below normal. During the last four months of the year warm, pleasant weather prevailed uniformly, but the warmth of this period was insufficient to counterbalance the record-breaking cold of the first quarter, and the year closed with deficiencies ranging from 1.1° to 1.6°.

Precipitation was irregularly distributed, both in point of area and time of occurrence. In general, however, it was greatest in the late spring and the late summer, and markedly deficient at the beginning and at the end of the year. There was also a pronounced lack of rainfall in June, which, coming as it did in the growing season, threatened to become serious, but the drought was relieved by the rains of the early part of July. After this time rain was frequent during the remainder of the crop season; so much so, in fact, as to interfere with harvesting and thrashing to a considerable extent. In April and May spring rains, combined with melting snows in the former month, caused floods in several watersheds of the lower Michigan and Vermont sections, occasioning much damage in localities.

While summer thunderstorms were frequent, and caused in a number of instances loss of life and destruction of property, general storms of the severer type were few. The snowstorm of February 21st-22d was accompanied by high northeast winds, which drifted the snow badly, and resulted in interruptions and delays in traffic of all kinds in practically the entire middle and eastern sections of the district. Two tornadoes were reported—the first at Grand Rapids, Mich., on July 13 and the second near Syracuse, N. Y., on September 15. Detailed descriptions of these storms are given in the respective monthly reports for the Lake region.

The following tables present the monthly values of temperature and precipitation, and the departures from the normals, for the various portions of the district:

MEAN TEMPERATURES, 1912.

			ME	AN TEM	PERATU	RES. 1912							
Portions of States lying in District No. 4.	January.	February.	March.	April.	May.	June.	July.	August.	Septem- ber.	October.	Novem- ber.	Decem- ber.	Annual.
Minnesota Wisconsin Illinois Indiana Upper Michigan Lower Michigan Ohio Pennsylvania New York	- 0.3 11.9 12.9 - 1.1 9.4	8. 5 13. 5 21. 8 19. 6 9. 8 15. 8 20. 5 21. 0 16. 5 15. 0	18. 3 22. 4 28. 8 27. 4 17. 4 22. 7 29. 3 28. 5 24. 6 22. 4	40. 3 44. 1 48. 8 49. 9 38. 3 44. 8 49. 6 45. 5 42. 0 41. 1	49. 5 53. 9 59. 9 61. 2 50. 4 56. 6 57. 7 58. 5 56. 0 54. 8	58. 3 62. 3 65. 4 66. 8 58. 0 63. 3 66. 0 63. 6 60. 7 59. 4	64. 4 68. 0 72. 9 73. 1 64. 7 69. 3 72. 7 70. 4 68. 7 67. 8	58. 9 63. 4 71. 0 69. 3 58. 4 64. 7 68. 5 66. 2 62. 9 61. 5	55. 6 60. 6 67. 0 66. 6 57. 2 63. 2 66. 8 66. 2 60. 9 57. 2	45. 8 49. 9 55. 2 53. 7 47. 5 51. 5 54. 1 55. 5 50. 8 49. 8	31. 6 36. 4 42. 6 41. 6 33. 7 38. 6 41. 8 43. 7 39. 3 36. 9	17. 7 26. 3 33. 2 32. 6 23. 1 30. 5 32. 9 34. 5 30. 4 28. 4	36. 41. 48. 47. 38. 44. 47. 47. 43. 41.
Minnesota Wisconsin Illinois Indiana Upper Michigan Lower Michigan	-16.6 -17.5 -11.9 -13.0 -15.2 -12.8	-2.6 -3.7 -3.6 -4.2 -2.8 -2.7	- 4.8 - 4.1 - 5.6 -10.7 - 5.0 - 8.1	+1.0 +1.8 +2.9 +1.5 +0.3 +0.9	-0.2 +0.8 +3.4 +2.1 +1.5 +1.3	-0.3 -1.0 -0.3 -1.7 -0.6 -1.8	-0.7 -0.6 +0.5 +0.1 +0.3 -0.8	-4.6 -3.5 -0.? -2.1 -4.5 -2.9	+0.3 +0.6 +3.1 +1.7 +1.3 +1.5	+1.4 +1.7 +2.6 -0.1 +2.6 +1.7	+4.3 +2.4 +3.6 +1.8 +1.8	+3.0 +4.8 +4.1 +5.7 +3.5 +4.1	-1. -1. -0 -1. -1. -1.
Ohio Pennsylvania New York Vermont	-11. 1 -10. 1 - 9. 2 - 9. 0	-4. 2 -5. 1 -3. 0 -3. 0	- 7.8 - 4.6 - 5.9 - 4.9	+1.8 +0.8 -0.7 -1.1	+2.1 +1.2 +1.1 -0.4	-2.3 -3.4 -3.3 -5.0	-0.3 -1.4 -0.1 -0.5	-2.3 -3.7 -3.4 -3.7	+1.8 +2.3 +0.6 -0.2	+1.6 +2.4 +2.3 +2.9	+1.9 +2.6 +3.0 +2.8	+3.3 +2.8 +5.9 +5.9	-1 -1 -1 -1

MEAN PRECIPITATION, 1912.

Portions of States lying in District No. 4.	January.	February.	March.	April.	May.	June.	July.	August.	Septem- ber.	October.	Novem- ber.	Decem- ber.	Annual
Minnesota Wisconsin Illinois Indiana Upper Michigan Lower Michigan Ohio	0. 28 0. 69 0. 84 1. 19 1. 56 1. 58 2. 26 3. 46	0. 21 0. 82 1. 57 2. 13 0. 44 1. 68 2. 08 1. 21	0. 26 0. 84 2. 20 2. 44 0. 43 1. 28 3. 05 3. 12	1. 87 1. 63 2. 55 3. 02 2. 18 2. 18 3. 72 4. 22	5. 12 6. 03 3. 97 4. 39 3. 49 5. 93 2. 74 3. 29	2. 14 1. 23 1. 65 2. 87 1. 78 1. 29 2. 96 3. 07	2. 08 6. 35 3. 86 3. 86 2. 58 4. 39 5. 64 3. 09	3. 00 5. 23 3. 59 4. 26 5. 00 3. 85 3. 85 5. 90	2 71 4 39 4 18 3 07 3 19 3 49 3 27 4 59	0. 65 2. 18 4. 28 2. 74 2. 32 2. 63 2. 87 5. 38	0. 42 1. 41 1. 84 2. 30 1. 63 2. 99 1. 27 2. 17	1. 32 1. 77 1. 02 1. 10 2. 26 1. 41 1. 82 2. 59	20. 0 32. 5 31. 5 33. 3 26. 8 32. 7 35. 5 42. 0
New York	2. 46 1. 76	2. 23 1. 98	2. 52 3. 02	3. 22 2. 94	6. 09 6. 41	1. 10 1. 90	2.94 2.73	3. 75 3. 92	4. 97 5. 29	2. 76 3. 70	3. 47 3. 57	2. 24 2. 10	37. 39.

Minnesota	-0.59	-0. 68	-1. 15	-0. 19	+1.91	-2. 17	$ \begin{array}{r} -1.99 \\ +3.54 \\ +0.22 \\ -0.20 \\ -0.96 \end{array} $	-0.80	-1. 36	-2. 24	-1. 23	+0. 68	-10. 41
Wisconsin	-0.72	-0. 50	-1. 15	-0. 89	+2.71	-2. 59		+2.66	+1. 13	-0. 06	-0. 53	+0. 14	+ 3. 74
Illinois	-1.16	-0. 67	-0. 35	-0. 33	+0.60	-1. 91		+0.71	+1. 06	+1. 85	-0. 39	-0. 87	- 1. 24
Indiana	-1.24	-0. 28	-0. 36	-0. 45	+0.17	-0. 65		+1.34	-0. 12	+0. 58	-0. 28	-1. 23	- 2. 72
Upper Michigan	-0.23	-1. 10	-1. 52	+0. 08	+0.23	-1. 23		+1.93	+0. 11	-0. 57	-0. 87	+0. 17	- 3. 96
Lower Michigan Ohio Pennsylvania New York Vermont	-0. 65	-0. 27	-0. 91	-0. 15	+2.82	-1. 70	+1. 42	+1. 17	+0.68	+0.05	+0.46	-0. 82	+ 2.10
	-0. 25	-0. 35	+0. 10	+0. 90	-0.95	-0. 63	+1. 90	+0. 71	+0.31	+0.37	-1.43	-0. 84	- 0.16
	+0. 43	-1. 72	+0. 46	+1. 82	-0.14	-0. 68	-0. 12	+2. 64	+1.10	+1.58	-1.44	-0. 47	+ 3.46
	-0. 36	-0. 22	-0. 12	+0. 57	+1.71	-2. 60	-1. 19	+0. 59	+2.10	-0.58	+0.72	-0. 82	- 0.20
	-0. 71	-0. 38	+0. 41	+1. 01	+3.29	-1. 77	-1. 21	-0. 46	+2.28	-0.88	+0.47	-0. 33	+ 1.72

Table 1.—Climatological data for December, 1912. District No. 4, Lake Region.

-			ears.	Tem	perature	, in c	legre	es Fah	renh	neit.	Prec	cipitation	n, in in	ches.	days,		Sky.			direc	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	ly u m ber of cloudy days.	cloudy days.	Prevailing wind d	Observers.
Minnesota.							-														
Cloquet Dulath	Carlton	800 1, 133	1 41	16.5 17.9	+ 0.2	40	17	- 16 - 11	121	43 38	2.13	+ 0.97	0.99 1.25	15.4 20.8	8 12	10	8	15 19		nw. sw.	W. H. Kenety. U. S. Weather Bureau.
Floodwood	do	1,257 1,500	6 5	15.7		40	14†	- 23		44	0.86		0,25	7.7	8	14	8	9	9		M. H. Schussler.
Two Harbors	Lake	614	18	22.0	+ 3.2	43	5.	- 13	22 22 22	41	0.74	- 0.23	0.30	9.0	6	5	18	8	8	W. W.	Oliver Iron Mining Co. G. W. Watts.
Virginia	St. Louis	1, 434	18	16.6	+ 5.5	39	14	24	22	38	0.68	- 0.51	0.30	6.6	7	6	5	20	20	sw.	Oliver Iron Mining Co.
Wisconsin.		***		00.0		40	0.1		10	91	0.00	0.00	0.00	4.0		200	9	9	0		Was O Whinds
Appleton Ashland	Ashland	795 615	11 21	20.8	+5.7 + 0.4	48 44°	2† 14	- 3 - 14a - 4e - 8 - 11 - 8	12 22	31 34a	1.54	-0.90 + 0.33	0.20	4.0 18.0	9	20 10	5	16	16	s. sw.	Wm. O. Thiede. Agr. Exper. Station. F. Kern.
Bayfield	Bayfield	635 804	3 14	24 6	+ 3.1	42°	6	- 4e	12 12	38°		+ 0.68	0.51	11.0	8	14	10	171		nw.	F. Kern. Louis W. Schmidt.
Crandon	Forest	1,060	17	21.3	+ 4.7 + 4.3 + 6.4	43	14	- 11	12	32						12	6 2 1	13 18	13	sw.	Frank Shoemaker.
Florence Fond du Lac	Florence Fond du Lac	1, 293 800	21 26	28.2	+ 4.3	47	10 T	man 18	12	33	1.58	+ 1.03 + 0.10	1.34	7.5	6	11 18	1	12	12	nw.	Fred S. Evans. Edward A. Seeley.
Grand River Locks	Marquette	770	16	27.8	+ 6.7	48	5	- 2 - 3	12	31	1.51	+ 0.17	0.52	2.5 4.9	7	20	10	8		sw.	Jerry Parkinson. U. S. Weather Bureau.
Green Bay High Falls	Marinette	617 1, 125	26	23.9	+ 0.7	49	2	- 8	12	1 33	1.49		0.70	8.2	10	17	5 6	9	9	sw.	No. Hydro-Elec. Pow. Co.
fron River	Bayfield	1,096 590	3	21.4 27.0			114	- 11 - 5	22† 12	40 29	3.15 1.38			30.0	7 5	11	8	14		8.	Winfield E. Tripp. Eugene V. Kimball.
Kewaunee	Manitowoc	616	61		+ 4.5		2	- 1	12	31	1.68	- 0.14	0.83	3.2	5	8	9	14	14	w. sw.	Miss Johanna Lups.
Menasha Menomonee Falls		764 842	15	28.4			5	0	12	97	0.82	- 0.26	0.43	1.0	5 7	16 15	9	11 7		SW.	Geo. T. Allanson. Arthur H. Christman.
filwaukee	Milwaukee	681	42	30.8	+ 4.8	54	1	2	12	27	1.34	- 0.58	0.95	1.2	6	12	7	12	12	sw.	U. S. Weather Bureau.
New London		762 590	16 21	26.0	+ 6.2 + 4.0	49	6	- 4 - 4 - 5		38	2.10	$+0.68 \\ +0.27$	0.77	6.0	6 9	13	5 14	13 8		sw.	August H. Pape. Wm. K. Smith,
Oshkosh	Winnebago	744	23	26.6	+ 3.7 + 5.7	51	6	- 5	12	36	0.73	-0.66	0.45	1.0	4	19	5 13	8 7 9	7	SW.	Evan Vincent.
Pine River Plum Island		900 588	17	26.4	+ 5.7	50 46	6	- 4	12	37 26	1.60	+ 0.46	0.50	5.0 3.0	8 7 7	9	6	15	15	sw. nw.	Geo. H. Carpenter. Wm. Robinson.
Plymouth	Shebovgan	843	2	28.3		52	6	- 2 0 2	12	35 28	1.87		0.82	4.5	7	15 13	4	12 14		w.	Paul O. Feldrappe. Richard C. Kann.
Port Washington	Ozaukee	713 633	19 15	30.0	$+6.3 \\ +6.0$	53 54	2 2	2	12 12	28	1.07	+ 0.38	0.40	3.5	5 5	18	6	7	7	nw. sw.	Daniel Davis.
Ripon	Fond du Lac	1,031	2	27.3		51a	6	- 3a	12	35a 28	1.41	1 1 91	0.53	2.5	5 7	12°	81			8.	Ripon College.
Sheboygan Sturgeon Bay		831 600	13 13	29.6	+ 4.0 + 3.3	58 47	6	- 2 - 1	12 12	29	2.66	+ 1.21	1.58	4.0	5 7	11	7	13	13	nw.	Louis C. Meyer. Adam N. Dier.
Superior	Douglas	701 857	3 17	18.6	+ 5.9	42	114	- 8	12		1.25	+ 0.55	0.57	8.8 12.5	12 8	9	10	12 8		sw.	Edward B. Banks. James H. Flagg.
Waupaca	Waupaca	991	14	20.44	+ 5.9	304	14	- 0	12	301	1.50	+ 0.55	0.01	12.0	0	1.0	0	0	0	sw.	James H. Flagg.
Illinois.	Cook	823	42	33.4	+ 4.1	57	5	3	12	26	1.08	- 0.99	0.45	T.	9	11	7	13	13	sw.	U. S. Weather Bureau.
Evanston	do	601		33.0		55	2	1	12	32	0.89	- 0.95	0.43	T.	6	14	2	15	15		City of Evanston.
Indiana. Auburn	Dekalh	874	16	20 66	+ 4.6	610	5	- 2b	23	380	0.78	- 1.35	0.36		3	106	51	146	14b	sw.	Mrs. Josie B. Kuhlman.
Berne	Adams	. 849	3	33.2			5	5		33	1.37			2.0	9	10	10			sw.	Henry M. Reusser.
Elkhart Fort Wayne		801 856	10	33.0	+ 5.7	60	5	5	12	32	1.07	- 1.38	0.46	0.2	11	6	10	15	15	sw.	Dr. Miles Medical Co. U. S. Weather Bureau.
Hammond	Lake	598	21	33.7	+ 5.7 + 6.8	58	1	5 2 7	11	35	1.25	- 0.95	0.44	T.	5	12	7	12	12		U. S. Weather Bureau. Carson W. Whitney.
Howe Notre Dame		886 712	7	32.8		59	5	5	12	35 31	1.55 0.62			0.7	5 7	21 5	15	11	11	sw.	James E. Zook. U. S. Weather Bureau.
Whiting		606	3	32.4		55	5†	5 3	12	25	1.05			T.	7	13	8	10	10	sw.	D. H. Boyd.
Michigan.—Upper Peninsula.																					
Baraga Bergland	BaragaOntonagon	623 1,300	10	19.6		42	14	-14	12	40	1.36 2.25	-0.23	0.30	13.6	11 9	10	0	21 26		w. sw.	D. S. S. & A. Ry. Frank McMonigal.
Calumet	Houghton	1,246	24	21.6	+0.4	40	1	1	12	27	4.74	+1.82	0.64	46.0	19	3	3	25	25	W.	E. S. Grierson.
Chatham Deer Park	Alger	875 610	11	20.8	+1.4	40 42a	1†	- 6 4a	12	36 21a	0.86	-2.00 -1.48	0.22	7.7	6	6	3	24 21a		n. nw.	Upper Peninsula Exp. Sta. Mrs. Sarah E. McGaw.
Detour	Chippewa	585 622	11							27						1		23	99.		Wm. Jones, jr. John Nolen.
Eagle Harbor Escanaba	Keweenaw	612	13	24.6 25.0		44*	5	- 4		29	1.80	+0.10	0.75	7.1	8	6	7	18	18	w. sw.	U. S. Weather Bureau.
EwenGrand Marais	Ontonagon	1,147 610	11	20. 4 25. 4	$+4.5 \\ +2.5$	44	14 5	- 8 4	8 21	37 29	3.34 2.44	+1.30 -0.6	0.62	22.5 14.4	15 12	11 4	2 2	18 25		w. nw.	W. B. Hatfield. Mrs. Lena Truedell.
Green	Ontonagon	622	1																		T. A. Green.
Houghton Humboldt	Houghton Marquette	668 1,536	11 15	22.6 21.4	$+1.1 \\ +6.3$	43	1 2+	- 9	22 23	39	2.92	+0.45 +1.32	1.00	21.1 5.4	19	6	3 0	25 25		nw.	U. S. Weather Bureau. D. S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	11	24.1	+4.6	47	24	- 7	12	38	1.61	+0.33	0.40	5.5	8	9	12	10	10	SW.	Chapin Mining Co.
Iron River	Gogebic	1,504 $1,520$	15	18.9	+3.2	44	28 14	- 8 -11	12 12	38	2.35 3.12	+0.53	0.95	9.0 18.0		17	6	8		nw. sw.	Victor D. Laing. J. V. Brennan.
Ishpeming	Marquette	1,536	12	21.4	+4.3	400		- 7a	12	30e	2.01	+0.10	0.60	11.6		2	12			W.	Cleveland Cliffs Iron Co.
Isle Royale Mackinac Island	Keweenaw Mackinac	610 831	5	28.3	+4.9	52s		7×		33 8			1.04			24	8			nw.	J. A. Malone. Mackinac I. State Park Con
Maple Ridge Marquette	Delta	734	6 41	22.5 24.8		40 42	2†	- 6	12 12	34 27	2.60 2.42	-0.10	1.00 0.72	8.0 17.9	8 15	11 2	11	16 18	16	S. SW,	Herman Johnson. U. S. Weather Bureau.
Menominee	Menominee	581	13	27.2	$+1.9 \\ +4.0$	47	6	- 5	12	29 27	1.28	+0.05	0.52	4.0	5	21	1	9	9	nw.	C. & N. W. Ry.
Munising	AlgerLuce	631 773	15 10	25.6 24.4	+6.1 +5.2	41	5†	0	12 12	27 29	2.61 1.99	+0.20 +0.88		15. 5 9. 7		1	5 8	25 22		nw.	Albert Oas. John Brown.
Powers	Menominee	868	12				1†				1.99	70.88	0.32	3.1						8.	C. & N. W. Ry. D. S. S. & A. Ry.
St. Ignace Sault Ste. Marie	Mackinac Chippewa	593 614	22 24	29.4 24.3	$+5.1 \\ +3.8$	52 48	6	- ⁷	8 12	33	1.80	-0.53	0.60	11.4	22	11	5 3	15 28		nw. se.	D. S. S. & A. Ry. U. S. Weather Bureau.
Seney	Schoolcraft	730	0	22.4		49	5	- 7	23	40	2.00		1.10	7.5	15	4	4	23	23	SW.	Western Land Security Co.
PhomastonVictoria	GogebicOntonagon	1,347 1,263	15	19.5 18.8	+4.7	40	3	- 8 - 6	12 12	35 38	1.64 1.89	-0.26		8.0 17.0	8	10	16	13 15		W. SW.	D. S. S. & A. Ry. R. S. Schultz, jr.
Watersmeet Whitefish Point	Gogebic	610	3 12	19.8	+4.5	40 45	17	- 9 2	12	33 29	2.14	+0.85	0.42	10.8 22.4	12 16	6 2	7 0	18 29	18	w. nw.	B. N. Grant. Robert Carlson.
Michigan.—Lower Peninsula.	- Tank be a second	010	12	20.0	, 4.0	*0	0	-	1.0	20	5. 50	10.00	5.00	20.2	10	2	0	20	20		- Joseph Jargons
Adrian	Lenawee	770	34	32.2	+4.1	58	6	9	13	31	1.05	-1.48	0.38	0.9	9	9	8	10		sw.	H. E. Hubbard.
Allegan	Allegan	698 750	21 25	34.8	+6.5	62 55	6	10	12	28 27	1.58 1.64	-1.15 -0.74	0.56	5.0	8	6	9	19	16	3. SW.	Pere Marquette R. R. P. M. Smith.
Alpena	Alpena	609 930	39 32	29.8 30.7	+5.0	52 57	6	7	12 13	29 29	1.07	-1.15 -1.18	0.43	9.4	13	1 6	10	20 17	20		II S Weather Bureau
Arhela	Washtenaw Tuscola	728	16		+4.0	60	6	8	13	32	1.02 2.20	-0.17		6.0	9	0	8	28	28	sw.	University of Michigan. Wm. Atkin.

Table 1.—Climatological data for December, 1912. District No. 4—Continued.

	1		years	Temp	perature	, in d	legre	s Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Меап.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	rainy or mo	Number of clear days.	r of pe	N u m b e r o f cloudy days.	Prevailing wind d	Observers.
MichiganLower Peninsula-Con.																				
Battle Creek	Calhoun	822	28	31.3	+3.7	57	6	8	13	30	0.88	-1.58	0.42	3.0	6	12	3	16	sw.	Elmer E. Sager.
Bay City	Bay Benzie	593 832	16 15	30.3	+3.7	54	5	8	12	30	2.67	-0.74	0.70	7.4	13	8	5	18	sw.	Pere Marquette R. R. Wallace Nutting.
BerlinBig Rapids	St. Clair	906	23	29.6 30.0	+3.1 +6.2	53 54	2†	6	23 12	27 27	1.34 2.36	-0.94	0.26 1.56	3.0	13 10	2 2	13 11	16	SW.	R. O. Gould.
lissfield	Lenawee	687	0	32.2	70.2	58	6	8 9	13	31	0.63	+0.04	0.38		2	17	3	18 11	SW.	Supt. Waterworks. Harry Watson. John M. Haven.
loomingdaleadillac	Van Buren Wexford	1,293	8 3	31.2 28.0		58 51	6	9 5	12† 12	35	1.90 2.26		0.80	10.0	10	9 5	3 2	19 24	SW.	John M. Haven. Cadillae W. & L. Co.
assopolis	Cass	903	11 34	29.0																Michigan Central R. R.
harlevoixharlotte	Charlevoix Eaton	610	8	30.8	+0.7	50 59	6	8	8 12	27 33	1.64	-0.69	0.94	7.0	3	13	3 2	25 16	nw.	Pere Marquette R. R. City of Charlotte.
heboyganlinton	Cheboygan	611 830	22 22	26.3 32.0	$+2.4 \\ +4.2$	48 55	2	4 7	8 13	26 30	0.65 0.57	-1.25 -1.56	0.30	8.0 T.	3	7 8	19	5	W.	E. A. Bouchard.
oldwater	Branch	984	15	31.8	+5.1	55	5 6	8	12†	30	1.05	-1.30 -1.29	0.24	3.6	6 9	8	1	9 22	SW.	David Woodward. L. S. & M. S. R. R.
oncord	Jackson Newaygo	685	7	31.0d 30.8		59d 53	6 2	8d	12	33	1.59		1.02	2.0	8	5	17°	2°	SW.	W. N. Armstrong. Gr. Rap. Musk. Power (
etroit	Wayne	730	41	32.0	+2.5	58	0	11	12	30	1.26	-1.13	0.35	3.6	15	2	9	20	W.	U. S. Weather Bureau.
urandast Tawas	Iosco	799 590	15	28.6	+3.9	46	2	0	9	32	2.35	+0.86	1.65		6	7	10	14	w.	H. J. Tobin. Detroit & Mackinaw Ry
loiselint	Wayne	640 730	15 23	32.5 31.5	+6.1 +4.9	58 57	6	10	12 12	27 27	0.84	-1.53 -1.16	0.22	1.1	10	6	13	12 19	W.	John Gilmore.
rankfort	Benzie	589	8	32.4	+4.9	48	2† 6	9	12	21	1.71	-1.10	0.45	6.0	8 9	5 7	0	24	w. w.	William L. Fisher. Geo. Morency.
angesaylord	Allegan	665 1,367	12	32.8 26.0	+4.1	56 50	6	11	12 23	28 32	1.70 1.50	-0.58	0.38	3.0	8 12	11 4	3 0	17 27	SW.	H. H. Hutchins. Michigan Central R. R.
ladwin	Gladwin	794	16			52 i	2	5 i	12	27 i						10	21	10 i		Geo. R. Smith.
rand Havenrand Rapids	Ottawa Kent	628	31 23	33.6 32.8	$+3.5 \\ +4.0$	55 56	6	11 10	12 12	24 28	1.75 1.32	-0.76 -1.22	0.82	3.8	16	3	7 7	20 21	W.	U. S. Weather Bureau. Do.
rape	Monroe	625	23 22 6	31.5	+2.9	58	6	8	12†	31	1.01	-1.02	0.50	2.8	13	5	10	16	SW.	Joseph W. Morris.
rass Lakerayling	Crawford	989	22	30.1 26.8	+3.9	52 50	57	8 5	13	27 27	0.98	-0.50	0.30	6.6	13	14	10 2	7 23	SW. W.	Menzo Conklin. S. N. Insley.
reenvillearbor Beach	Montealm	802 635	24	30. 2°	+4.0	55° 55	2 5 2	6°	12 12	26°	2.47		0.95		7		11			Michigan Pickle Co. Pere Marquette R. R.
arrison	Clare	1,159	19	28.9	+5.5	52	1†	3	12	30	2.32	+0.44	1.87	2.0	3	5	3	14 23	SW. W.	Do.
arrisville	Alcona	616 698	28 20	28.4	+3.9	52	6	4	12	34	2.37	-0.16	0.97	9.0	12	4	7	20	SW.	D. W. Mitchell. Pere Marquette R. R.
aves	Huron	620	22	29. 2	+2.0	59	6	7	12	30	1.38	-0.27	0.70	1.2	5	6	5	20	SW.	C. F. Leipprandt.
ighlandillsdale	Hillsdale	1,006	20 15	30.6	+5.3	56	5†	8	12	31	1.54 1.52	-0.80 -1.60	0.44	3.2	7 8	11	2	18	SW.	A. D. DeGarmo. C. L. Herron.
Iolland	Ottawa	610	6	32.6 28.2b		55	6	11 3b	12 12	25 28b	1.46		0.40	4.0		6	10 3b	15	SW.	City of Holland. James H. Ostrander.
Ioughton Lake	Livingston	924	20	30.5	+3.9	51b 56	5†	8	12		0.78	-0.95	0.23	0.8	10	6	11	19b 14	SW.	Frank Sharp.
vanackson	Kalkaska		23 15	29. 5s 31. 4	+5.6	53g	5	8	13	318	0.64	-1.29	0.30	1.7	9	12	9	15g 10	sw.	O. L. Giddings. City of Jackson.
eddo	St. Clair	667	23	30.0	+3.2	58 54	2	8	12	25	0.85	-1.37	0.35	2.1	9	4	12	15	SW.	William Bice.
Calamazoo	Kalamazoo Ingham	955 863	36 48	30.8	+3.0 +4.2	56 57	5† 5	8 9	12†	31 27	2.03 1.20	-0.80 -0.88	0.55	5.0	8 16	117	5 7	15 17	W. SW.	Kalamazoo Asylum. U. S. Weather Bureau.
ansing (Capitol)	do	881	25	30.8	+3.1	57	6	9	12	28	1.44	-0.58	0.42	1.8	14	7 7	4	20	SW.	State Board of Health.
apeerudington	Lapeer	827 586	13 14	32.1	+ 5.2	53	i	8	12	26	1.54	- 0.44	0.97	3.8	12	2	7	22	w.	Michigan Home. Pere Marquette R. R.
uther	Lake	1,028	21	28.8 27.8		52 52	2† 6	5 5	12	34	2.26		1.28	11.5	16	4	7 7	20	SW.	John Nichoson. G. R. & I. Ry.
fackinawfancelona	Antrim	1,121	16					4h		35				6.5		51		18h		. Do.
fanisteefarshall	Manistee	600	15	32.4	+ 4.8	621	6 5	121	12 12†	32	1.85	- 0.54	1.00	0.5	3	5	1	24		Pere Marquette R. R. E. B. Stuart.
fidland	Midland	604	13	30.5	+ 4.3	50	8	7	8	43	0.80		0.50	3.0		6	1	24	SW.	Pere Marquette R. R. George J. Tripp.
forenci	Macomb	811 615	12			58	6	7	12	29	1.29		0.45	1.6		9	3	19	SW.	. Waterworks.
Iount Pleasant	Isabella	826 587	13 16	30.6	+ 5.8 + 5.3 + 2.9 + 3.9	55 54 53 57	6	6	12 12 12	38 26	0.65	- 0.89	0.60	6.5	2 14	8	14 13	10	W.	Pere Marquette R. R. G. R. & I. Ry.
luskegonld Mission	Grand Traverse	858	18	29.5	+ 2.9	53	1 2	6	12	31	1.51	+ 1.45 - 0.44 - 1.52	0.60	4.3	13	4	8	19	SW.	E. O. Ladd.
livet	Arenac	934 616	22 13		1	57	5†	8	12	29	0.98	- 1.52	0.40	1.6	10	10	1 6	20 19	W.	G. A. Knapp. Detroit & Mackinaw Ry
naway	Presque Isle	826	9 15	27.4		60	2 2	5 9	81	33	0.60	0.42	0.20	6.0		4 2	7	20 10	W.	Do. Owosso Sugar Co.
etoskey	Emmet	660	22	30.8	+ 4.2	58 52 57	6†	8	8	29 33	1.21		0.43	1.1	8	3	2	26	sw.	G. R. & I. Ry.
lymouth	Wayne	725 935	15 12	32.1	+ 4.5 + 4.2 + 4.6 + 1.1 + 3.5 + 3.5	57	6	10 8	134		0.23 0.72	- 1.40	0.10	1.3	3	18 12	9	14	SW.	Pere Marquette R. R. Fred W. Shaw.
ontiacort Austin	Huron	618	15	30.4	+ 3.5	56 55 55	6	10	12 12 12	27	1.15	0.0	0.57	1.5	7	11	9	11	S.	Pere Marquette R. R.
ort Huron	St. Clair	639	37 15	30.8	+ 3.5	55	6	10	12	26	1.29	- 0.88	0.29	4.7	17	5 3		19 20	SW.	U. S. Weather Bureau. Pere Marquette R. R.
oscommon	Roscommon	1,141	11	26.0d	+ 4.3	50d	6	14	23	29d	0.87	- 0.88	0.21	7.1	9	3	d 10d	144		. Marcus Schaaf.
aginaw, east side	Saginaw	601	10	32.0	+ 5.8 + 4.7	56 56	6 5	9 8	23 12 12	26 29	1.39	- 1.20	0.40	2.4		8 3		12 19	SW.	Postmaster. U. S. Weather Bureau.
ginaw, west side James	Charlevoix	681	6	28.8	+ 2.8	50	6	8	12	30	1.70		. 0.55	7.0	13	2	9	20 19	SW.	James Malone. City of St. Joseph.
Joseph	Berrien	593 790	25	31.0		58 61	5†	13	13	30 36	1 06	- 1.29	0.50	1.0		9	11	11	w.	Pere Marquette R. R.
outh Haven	Ionia	639	17 16	31.6	+ 4.1	56	6	9	12	43	1.23	- 0.86 - 0.57 - 0.46	0.65	2.0		13		23	SW.	John Wallington. Mrs. M. E. De Diemar.
hornville	Lapeer	975	35	30.5	$+5.9 \\ +2.3$	50	5† 2†	8	12	21 23	2.00	- 0.46	0.45	10.5	10	3	7	21	SW.	J. S. Caulkins.
raverse Cityassar	Grand Traverse	588	15 11	31.3	+5.0	56 52 50 54 56 58 52 49	6	8	12	29	2.18	- 2.07 + 0.63	0.24	9.5			1 12	22 17	SW.	G. R. & I. Ry. Pere Marquette R. R.
aseni	St. Joseph	842	15	31.6	+ 5.3 + 5.7	58	6	8	12	26 32	1.19	- 1.64	0.42	4.5	8	6	0	25 24	SW.	Charles A. Palmer. Michigan Central R. R.
Vest Branch Voodlawn (P. O. Vien-	Ogemaw Montmorency	973	7	27.2 25.4	+ 2.9	49	6	3	23	33 28		- 0.05	0.22		11	6		24	W. SW.	T. C. Mathews.
na). psilanti	Washtenaw	736	27		+ 4.0	55	5†	7	23	30		- 0.97		2.3		2	21	8	sw.	Orin J. Bemiss.
Ohio. kron	Summit	1,881	25	32,2	+ 1.7	59h		10		30	1.97	- 0.61	0.77	4.0	9			16 19		Prof. C. R. Olin. North G. Osborn.
ntwerpenton Ridge	Hancock	. 800	19	32.8	+ 3.4	59	1 1	6	12	31	2.25	- 0.40	0.76		7	12	10	16	SW.	J. W. Powell.
owling Green	Wood	670	31	32.0	+ 3.4 + 3.6	60	5	4 7	13	30	1.45	- 1.72 - 0.58 - 1.25 - 0.66	0.48	3.5	5		6	15 13	SW.	G. C. Housekeeper. James R. Hopley.
leveland (1)leveland (2)	Cuyahoga	1,000	18 41	33.8	+3.8 + 2.7	60	5	11	12 12 13	31	1.33	- 1.25	0.35	3.3	10	6	6	19	SW.	U. S. Weather Bureau.
leveland (2)	Ashtabula	754 675	15	33.8	+ 4.4	60	5	10 11	13	28	1.78	- 0.66	0.46					16		Rev. F. L. Odenbach, S. E. L. Ransom.

Table 1.—Climatological data for December, 1912. District No. 4—Continued.

			, year	Tem	peratur	e, m	legre	es Fai	rent	ieit.	Pre	cipitation	i, in in	cnes.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f	Prevailing wind tion.	Observers,
Ohio-Continued.																				
indlay. remont ledges lillbouse litram . ludson ima . ledina . lontpelier apoleon iew Bremen oorth Royalton oorwalk . berlin ttawa . andusky . iffin oledo . pper Sandusky . ickery .	Paulding Lake Portage. Summit Allen Medina. Williams. Henry. Auglaize Cuyahoga Huron Lorain Putnam Erie. Seneca Lucas. Wyandot	776 628 725 726 997 1, 260 1, 123 875 944 880 680 1, 038 1, 000 719 855 720 629 775 769 854	23 10 18 19 32 51 13 24 20 25 19 26 37 19 35 30 41 29 19	31.6 33.8 32.2 32.6 32.9 32.1 34.4 34.2 33.6 33.6 32.8 33.1 33.0	+ 4.8 + 3.1 + 3.6 + 2.4 + 6.3 + 3.8 + 3.7 + 4.9 + 2.9 + 2.6 + 2.9 + 4.1 + 3.7 + 4.1	60 62 60 60 59 63 61 60 58 60 59 62 62 61 62 65 58 60 62	655555555555555555555555555555555555555	5 9 5 5 8 8 9 9 6 6 6 7 7 5 5 8 9 9 7 10 6 9 7 8	23 12 12 13† 13 12 11 13† 12 12 12 12† 12† 12† 12† 12 12† 12† 12	29 28 33 31 26 33 30 33 34 32 30 33 29 32	1.73	- 0.44 - 0.83 - 0.46 - 1.61	0.57 0.60 0.55 0.71 0.60 0.73 0.95 0.68 0.60 0.35 0.35 0.54 0.80 0.68 0.45 0.48 0.58	2.0 3.7 4.2 13.0 5.5 5.0 7.0 3.0 6.0 5.5 5.5 1.5 4.3 7.0 2.0 4.3	4 6 10 6 6 6 6 5 8 6 8 7 8 10 10 10 10 10 10 10 10 10 10 10 10 10	17 12 9 6 8 11 13 11 6 8 16 8 7 7 13 4 4 9 9 7 11 6	12 6 4 7 11 11 9 5 1 3 8 13 9 5 16 7 8 9 5 8 18 9 9 8 18 18 18 18 18 18 18 18 18 18 18 18 1	2 13 18 18 12 9 9 15 24 20 7 10 15 13 11 20 14 15 15 17	SW. SW. W. SW. W. SW. SW. SW. SW. SW. SW	Dr. E. A. Moser. E. Stanley Thomas. Charles Srutzman. J. W. Doncaster. Prof. G. H. Colton. Dr. W. I. Chamberlain Miss Ollie De Long. F. W. Clark. G. L. Laser. A. C. Senter. Miss Lillian Grothaus. W. S. Edgerton. Giles R. Gregory. Prof. F. F. Jewett. Prof. J. T. Maidlow. U. S. Weather Bureau. Prof. T. H. Sonnedecke U. S. Weather Bureau. Robert E. Tracht. John W. Bart.
ickery apakoneta auseon	Fulton	898 780	40	32.3	+ 3.9	58 58	5† 5†	6 7	12 12	30 31	1.41	- 1.05	0.51 0.53	6.0	10 15	12 7	9 10	10 14	S. SW.	Thomas Mikesell.
Pennsylvania.	Lake	740						*****			1.91		0.62	11.0	7	10	7	14	SW.	C. M. Richardson.
rie	Erie	658	39	34.5	+ 2.8	60	6	14	12	26	2.59	- 0.47	0.71	10.9	13	2	9	20	sw.	U. S. Weather Bureau.
New York.	,																			
lams Center ngelica opleton iburn	Allegany Niagara Cayuga	540 1,340 270 715 585	21 29 21 43 17	29. 2 34. 5	+ 8.4 + 3.5 + 5.2 + 4.3	60 57 60 62	6 6 6	0 1 14 12°	9 9 12 9†	28 31 27 25	3.82 1.94 1.38 2.54	- 0.15 - 0.72 - 1.23 - 0.22	0.64 0.39 0.39 0.64	29.0 9.5 0.3 10.0	14 16 8 8	15 1 1 9	3 8 11 19	13 22 19 3	S. W. SW. 3.	A. E. Cooley. Charles P. Arnold. H. A. Van Wagoner. A. H. Underwood. W. G. Markham.
ue Mountain Lake rockport uffalo inton	Monroe	1,750 537 767 448	12 16 61 18	33.6 34.4	+ 6.2 + 4.3 + 4.2	59 59 59	6 5 6	13 14 - 3	9 12 9	25 24 33	1.92 2.21 2.55	- 1.14 - 1.16 - 1.04	0.48 0.66 0.71	8.5 5.2 12.7	13 12 16	3 3 6	8 10 8	20 18 17	SW. SW.	B. F. Merwin. W. H. Lennon. U. S. Weather Bureau. Do.
pe Vincent. lazy. laz	Jefferson Clinton Wyoming Clinton Genesee. Onondaga. Franklin Clinton Livingston	246 151 1,090 1,490 500 530 1,729 928 1,000 1,321 928 1,000 1,824 1,000 1,864 520 900 1,750 1,864 521 1,750 1,864 1,038 485 1,410 1,038 485 1,776 1,750 1,776 1,752 1,177 1,600 1,430 1,430 1,430 1,430 1,430	7 12 0 7 13 11 10 10 14 14 14 12 15 4 4 12 15 5 12 4 11 12 8 8 3 3 2 6 6 3 6 8 4 4 8 3 17 10 12 12 2 20 10 10 10 10 10 10 10 10 10 10 10 10 10	31. 2 29. 6 3 32. 3 3 . 1 6 3 33. 4 28. 4 32. 6 26. 2 26. 4 2 26. 4 2 25. 5 3 . 9 34. 0 33. 6 33. 6 33. 6 33. 6 33. 6 33. 6 33. 6 3 3 3 3	+ 9.7 + 5.6 + 8.1 + 7.9 + 6.2 + 6.4 + 5.0 + 8.7 + 7.4 + 4.8 + 7.2 + 7.1 + 4.9 + 4.8 + 6.8 + 3.9 + 8.0 + 4.9	54 63 61 55 59 64 54 54 62 60 62 60 63 59 61 60 60 59 51 61 60 60 59 61 61 60 60 60 60 60 60 60 60 60 60 60 60 60	7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0 0 0 8 8 - 5 9 9 1 1 12 2 10 11 1 - 1 1	9 12 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	33 32 29 36 27 29 32 39 24 27 27 27 27 37 39 42 41 26 33 30 40 40 42 42 41 42 40 40 40 40 40 40 40 40 40 40 40 40 40	$\begin{array}{c} 1.84\\ 0.23\\ 3.39\\ 2.57\\ 3.39\\ 2.57\\ 1.60\\ 3.59\\ 2.57\\ 1.60\\ 3.59\\ 2.26\\ 3.51\\ 3.92\\ 2.163\\ 3.52\\ 3.92\\ 2.163\\ 3.92\\ 2.24\\ 4.59\\ 2.24\\ 4.59\\ 2.37\\ 1.19\\ 0.83\\ 3.92\\ 1.40\\ 3.92\\ 2.24\\ 2.57\\ 1.19\\ 0.83\\ 3.92\\ 2.24\\ 1.25\\ 1.2$	- 1.30 + 0.62 + 0.66 - 1.39 - 0.16 - 0.97 - 1.16 - 0.83 - 0.80 - 0.07	0.90 0.13 0.71 0.45 1.22 2.06 0.70 0.09 	1. 0 11. 2 5. 9 10. 6 5. 5 10. 6 8. 2 7. 8 8. 2 7. 8 8. 4 7. 3 8. 4 7. 3 18. 1 12. 3 9. 5 19. 2 18. 1 18. 1 12. 3 9. 5 19. 2 19. 6 19. 6 1	6 2 12 14 7 7 11 17 5 9 6 6 22 13 8 15 9 6 6 22 13 8 15 7 7 12 12 19 11 18 8 7 7 12 19 11 18 8 7 7 12 19 11 10 16 12 10 10 13	10 8 2 12 4 6 6 23 5 5 5 5 5 5 5 5 5 5 5 6 6 7 7 7 8 8 3 12 12 12 12 12 12 12 12 12 12	7 5 9 3 10 7 4 14 8 8 6 6 15 11 7 18 10 8 4 4 19 19 19 19 19 19 19 19 19 19	14 18 20 16 17 18 4 12 16 17 6 20 11 15 14 7 7 14 16 19 9 16 20 7 7 7 19 16 18 18 18 19 12 22 18 15 19 19 11 2 2 2 2 2 2 2 2 2 18	W. S.	J. Harry Grapotte. W. R. North. Charles Peterson. Dr. W. N. Thayer. Joseph S. Wilford. Dana H. Wells. Gabriels Sanitarium. J. W. Harkness. Bernard P. McGrady. W. S. Barager. U. S. Weather Bureau. E. R. Wells. Lucius A. Goodyear. Charles Forsell. Henry van Hoevenberg James O. Howard. Robert N. Clark. Prof. W. F. H. Breeze. C. E. Me Bride. L. W. Brown. John F. Redmond. State Hospit J. Mrs. S. W. Nelson. U. S. Weather Bureau. William J. Winke. E. B. Bartlett. W. H. Jeffers. E. D. Babcock. A. E. Sutherland. Prof. P. T. Coolidge. R. J. Dunning. U. S. Weather Bureau. John H. Coryell. C. H. Latting. Edward Conron. U. S. Weather Bureau. Rev. A. W. Maddox. Benjamin Breads. Prof. P. T. Coolidge. H. P. Dunlap. O. F. Corwin. John P. Rogers. M. N. Stewart. B. V. Brookins.
Vermont. urlington	Addison	404 507 601 576 876 750	4 18 20 0 25 20	31. 2 26. 8 26. 3 27. 4	6.5 5.8 4.5 + 6.9 + 5.6	59 60 59 62 61 56	6 6 6	5 5 2 - 2 0 3	9 9 9 9† 9	27 30 41 39 33 29	2.07 2.00 2.33 1.90	- 0.54 - 0.19 - 0.97 - 0.81 + 0.84	0.70 0.75 0.98 0.85 0.52 0.85	1.4 7.0 4.0 13.0 6.3 3.0	10 9 8 12 10	5 6 6 11 9 7	8 5 10 2 4 11	18 20 15 18 18	S. S. S. S.	U. S. Weather Bureau. C. H. Lane. L. H. Pomeroy. A. V. Wiswell. U. S. Weather Bureau. E. R. Pember.

*, b, e, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for December, 1912. District No. 4, Lake region.

Stations.	Watershed.	_			*					-						-, 0	f mo	-			-			-				1					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota.																																	
oquet		.28						. 25										.99		*	. 15											.01	
nluthoodwood	do	.30		Т.		. 28		.02											Т.	.08	.05	.04		T.			T.				.01	.03	1.2
ephens Mine	do	. 10		.10	T.	.09		T.	0.6									T		. 11	. 12		T.	,05		.25							16
vo Harbors	do	.30		.11	T	. 05	T.	T.									12	. 15		.06	. 18	T.			.30	.02							0
Wisconsin,					1																												
pletonhland		.29	.20			. 13	.02	T.	.03			T.	T			. 10	· Tr	63	.06	T.	.18	.02	T.	T.		T						Т.	1
vfield	do	*	1.16																														
cil rnucopia								T.										. 48	T.	T.	. 17	. 115					T.						1.3
andon	. Fox																	. 02	.02		.02	T.		1									1.
orenceond du Lac	. Menomonee.	30	1.34			.08			.20							10	Т.	.30			08									****		****	
and River Locks	do	. 10	. 00			. 10	. 08									. 12		.51			.03												
een Bayigh Falls		.53	.21			.06	T.	.04									.08	. 21	T.	.01 T.	.27	.02		T.			****						
on River	. L. Superior.	. 15				T.	.50	. 40										1.30			. 20	. 10				. 50				T.		T.	1
ewaunee		*	.80			.11		.02								.05		.31	.45		T.					****			***	T.	****	T.	
enasha	. Fox	. 43				. 14	T.	T.								.05		.11			.09						T.				7		1
enomonee Falls	do	. 34	.88			.20										.03 T.	T.		T.	.02	.02						T.				T.		
w London	. Fox	. 15	.77													. 12			. 20		. 20												
ontohkosh	. Fox	. 45		.:		. 03		. 10								. 15		T.			. 10	. 21											1
ne River um Island	do	. 50	. 16			. 15		T.	T. 16		· ····					. 20	T.	. 46	T. T.	T.	. 15 T.		T.	T				T.			T		
ymouth	do	. 33	. 82			. 06	T.		. 10								T.	. 45		T.	. 16	T.					. 02	2			T.		
rt Washington	do		. 80		T.	. 20										T.	T.			****	. 30					***	T.				T	****	1
pon	. Fox	. 26	. 53			. 05	. 10									. 10	T.	. 32		T.	. 05	T.											-
eboygan urgeon Bay	L. Michigan.		1. 58			. 08	T.	06	T.							T.		. 70	T.	T.	. 20 T.						T.						1
perior	. L. Superior.	. 04	. 16			. 01	. 15		. 02							. 04	. 02	. 57	. 03		. 16		. 02				. 00	3					
aupaca	. Fox	. 38	. 43			. 07	. 20	T.	***							. 13		. 49	. 02		. 11												1
Illinois.																														1			1
icago	. L. Michigan.	. 18	. 12	. 00	8	. 15			T.			T.					. 25	. 20	T.	T.	T.						. 0			. 00			
anstonghland Park	do	.01	. 26	T.	. 08	. 09			T.							T.	T	. 43	T.								T.			T.			
				1.00					1		1			1			1	. 10	1			1					1			1	-		
Indiana.													-														1		1				1
aburn	. Maumee	T.				. 30			T			T.				03	T.	. 12									0	T.	2	. 0			-
khart	. St. Joseph																																
ort Wayne	. Maumee	. 20	. 24	Т.	. 01	. 02					T.					. 01			. 01	T. T.	T.							5 .0		. 2			
owe !!	. St. Joseph	. 60	. 45	5		. 30														1											. 20		
otre Dame	do	. 29		T.		. 03			T.			T.	T.		-	T.	T.	. 09		T.	T.	T.					T.	T.		Т.	17		
		. 00		1.00	1	. 00							-	1	1	1		. 00	1.	1	1.		1		1	1	1	1	1	1		1	
Aichigan.— Upper Peninsula.																																	1
araga	. L. Supericr.	. 01				. 02	. 03	.30	.10					. 1	0			. 20	.20	.10	.20		.10	70	m	70						70	-
ergland:	I. Superior	. 70	4.	56		25	64	U . Od	1 . 32	8 . 15	2 7	.10	.10	6 T.	0	T.		.32	.12	.12	.04	. 45	3 .40	.40	1.10	. 10	T.	.00	3			1.	
atham	do	.0	T.			. 02	. 16	. 02			. 22					700		70	1.		70			A.									-
er Park	St. Marvs	.18	T.					.10	.20	. 20		.2	. 30	0		T.	****	1.	****		1.	****				***							
agle Harbor	. L. Superior	. 50	T.	T.		. 12	. 20		. 42	.00	T.	.05	. 0.	5 T.			. 14	.15	T.	T.	****	. 31	1 .1:	1.13	T.	T.	- 00	-					-
vanaba	Ontonagon.	. 2	.32	2		. 45	. 62	.10	.09	.10	1.1	.21				T		.38	.20	.08	.20	.21	1 .0	5		***	T.					T.	1
er Park etour agle Harbor scanaba wen rand Marais.	. L. Superior	.80	T.			. 10	.30	. 20	. 01		. 01	.02	.2	0		T.	****	. 30		.20			20	T.	T.	T	. 1	0			T.		
oughton	do	.71	.10	j		. 60	.40	.14	.14		.02	.07	.0	3 T.		T.	. 03	.30	. 03	.01	. 02	.1	1 .10	0.0	0 .01	0.	1 T.	T.				T.	1
umboldt	Escanaba	1.00	A			1.00	.10	.04	1		T.							30	T.	T	.04	1 16		T.					-				
reen	do	.78	.20)		T.	.40	.30	.10							T.		. 40	.10		. 10	T.	700					. T.				T.	
onwood	L. Superior	.27	.20	5		1.10	.87	23	. 63		T.	5				T.	0	- 43	. 02	Т.	. 12	. 10	T.	T.	.0	i	0	21				T.	
ie ituyaie	. L. Superior.							****		***	0.00							****	770	PD.	CP3	FFE	CES					-1				Jane.	1
ackinack Island aple Ridge	L. Huron L. Michigan. L. Superior Menominee L. Superior Tequamenor	1.00	30		. 0.	10	T.	T.	.20	. 10	т.	T.	T.					.12	.20	.20	1.	1.	1.										
arquette	. L. Superior.	. 3	.07	7		. 28	. 19	.08	3 . 17		. 0	T.				.00	3	.72	.10	T.	. 19	.0	7 T.	.0	4 T.	T.	. 0	1 .0	4				-
nominee	L Superior	5	5 0	5		. 30	55	T.	1 . 25		0	3 .10	1.10	0		T.		. 18	1.04	.00	1.16	3 .00	2		. 10	0	0	3 .0	6				
wberry	. Tequamenor	1 .5	1 .2	5		. 18	. 5	.06	.08	T.	.0	5 .00	5 .0	7			02	.00	.00	T.	.00	T.	.0	4 T.	.0	5	- T.	T.					-
wers	L. Michigan.						****																										
ult Ste. Marie	St. Marys	. 5	.0	5		. 26	0.0	1 .09	01	.0	1 .0	8 .0	1.1	8 .0	1	0	6	.19	.0	T.	T.	.0	3 .0	3 .0	1 .0	1	0	I T	0.0	1 .0	1 .0	T.	1
ney	L. Superior.	. 49	3 .0	5		. 36	1. 3 .40	0 .10	0		. 10	0	0.0					.10														.0	5
ictoria	Ontonagon.	. 1	5 .4	4		. 27	. 40	0.0	4 .12	·		.13	2 .0	2		70		. 18	11	12	11	2	5 T									T	-
atersmeet	L. Huron St. Marys Manistique L. Superior Ontonagon do L. Superior.	7	0.0	4		111	.50	3 .12	2 .37		0	3 .3	1 .4	i		0	4	.26	.20	.00	2		0	6	0	4			0	5			
Michigan.—Lower Peninsula.														-		1												-					
drian	Raisin	0	8 .3	8		06	.0	5								T.		. 01	ı	0	.0	1						0	ő		3	5	0
lleganlma	Raisin Kalamazoo Saginaw L. Huron Huron Saginaw	.2	1 .5	6	. T.	.17			T. 00	•		T	1.3	0			7	. 1	5		2	T					1	2 .0	6	1	. T.		
pena	L. Huron	T.	1.4	3		.0	T.	.0	1 .00	3	T.	.0	2 .0	1 T		T	T.	1.1	5 T.	T.	.0	4 .0	7 T.		0	1	1	2 .0	8		00	3	-
n Arbor					-1		-		-															1	1	1	795		10	0	0 0		

TABLE 2.—Daily precipitation for December, 1912. District No. 4—Continued.

	Tree plane - Control - Con	Stations.	Watershed.														I	Day o	of mo	nth.														
Feminal Comb. Kalamazeo. 42	Persistant Creek	Described.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Scheller Sughar S	Selection	Michigan.—Lower Peninsula—Con.																																
Belsey 60 70 10 10 10 10 10 10 1	Barbery 0.7 75 20 10 0.0 00 20 20 10 0.0 00 20 20 10 0.0 0.0 10 0.0 0.0 10 0.0 0.0 10 0.0 0.0 10 1														T.	***				. 05		T.	. 12						T.	. 15		. 09	T.	
erin Claston	Cliston C. S. C. 19. 60 1.0 20			.60	.70			. 09						T.	. 05			T.		.28	T.		.02	.10	T.	T.			.14	T.		. 05	. 08	
Description L. Mebitage T. S.	cominglais. Lateriagn. Later	erlin	Clinton	.02		. 26		. 25	. 02		. 02							. 02		.08	T.		.08	. 03						. 05			. 26	
Description L. Mebitage T. S.	cominglais. Lateriagn. Later		Muskegon	. 06			Tr.								****					.14		.04	.08					T.	. 08	****			.13	
dillhe Marister 30, 16	dillac. Manjakes 20, 1, 16	loomingdale		T	. 86				T		10	T.	T	T	20	****		T		****	T	T	20	T				****	T.	.60		T.	T.	
Lambergan. Lamber	arbevolt.																																	
sarbotter Makespoon of the person of the per	arbeite		St. Joseph								****																							
sebogen Cheboygan T	bebygen. Cheboygen. T						1	000							T,	****						T	20				****			****				****
Inton Raisin 15 24 007 7	nton										.30			T.	T.	T.	T.	****				T.		.30		T.								
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THE STATE OF SECTION 1. ST	rand. Sections. 10 1 62 20 94 01 20 20 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16							. 08			T.			T.	T.							. 02								.04		. 09		
Section Rouge Section Sectio	Septe Houges	urand																																
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markfort Belevy 11 15 25 .	andreft Belesy 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			.01	. 25		.03	. 15												.03										T.				
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TABLE 2 .- Daily precipitation for December, 1912. District No. 4—Continued.

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pe Vincent II	St. L'rence.	. 90							. 04	. 05										. 27			. 03								. 55		
azy	Champlain . Genesee		T.				.71	T.	T)	T. T.	. 10	T. T.	10	. 12			.02		T.	. 05		. 10	.04		T.			T.	.06		. 13		
estnut Lawn	Champlain.		.09		****	. 05		T.	T. T.	. 10		. 02	.02	.40	. 05	T.	. 02	T.		. 45	.06			.01				T.	.10		. 14		
bayetteville	L. Ontario.		1.00				. 18		. 20 T.								T.	T. T.	T.	. 45 T.	. 30	.30 T.	T. T.		T.			. 60	T.		1.22		1
ayetteville	Oswego		. 04				2.06		Т.	.01		T.		T.			.06				.03	T.		T.	. 18			. 23			. 24		1
abrielsarkness	St. Regis Champlain		.50		.09		. 10			T.		.05		.05			. 08			. 70	. 15		. 07	T.				. 14	.03		. 23		1
emlock Lake	Genesee		.11			. 24		T.	T.	T. T.	****	T. T.	T.		****	. 09		1111	. 20	T.		. 15	****		.01			*	. 64		22		
unt	do		. 30				. 65															. 20						. 20			. 46		
hacaeene Valley	Oswego		.06			.08				T.		T. T.	. 03	T.		. 05	1995				. 03	.01	T.	T.	. 19			.35			. 10		-
ing Ferry	Ausable Oswego		. 63			****	T.		. 40	1.		1.	.04	T.		.ii			.37	. 06	.03		1.	. 02			3	. 16			. 65		
ing Ferryake Georgeake Placid Club	Champlain			. 23															. 75						.11						1.10		
ake Placid Club	A'ble, W. B.		.34	. 05			. 15	. 05	. 45	. 21	. 05		. 08	. 12			. 28			. 42		.08			. 18		. 05				. 26	. 15	
auterbrunnen	L. Ontario.		.30				. 74		T.	T.		T.	.08	. 02	2		T.	05		.05	.03				T.			. 14			40		
ockportowville	Black		.08		****	****	.01			.20			.16	. 08			1.	.00		. 16				.07				. 08			34	.02	
oira	St. L'rence.		. 07					T.	. 40			.30	T.				T.			.90	. 10		T.		. 10			. 20	, 10)			
ehasane	Black		. 54				. 15		. 28	T.		.07			. 03					.70	.30	. 01		. 15	.03	. 02	2	- 13					3
orth Lakegdensburg	St. L'rence.		1.11				1	243	.27		. 13 T.		. 70		.00		T			.39	. 50 T.	****	T.	. 19 T.				. 20					
ld Forge	Black			.20			.30	.07				. 04	. 52				.06			. 75	.31	. 02		. 24		. 03	3	. 13	. 15				
swego	L. Ontario.		. 29		T.	. 05	. 28	. 08	.01	T.	T.	. 02	. 55	. 02	T.	.07	.06		. 01	. 14	.01	T.	T.	T.	. 05	.04	4	. 2	.05	5	. 43	3	-
alermo	Lake Erie L. Ontario		.01					.30	.04	. 66		. 17	. 05		1 .05		****		Tr.	.01	.02		T.	T.	10	A.	2	.50	20		10		
erry City	Oswego		.00		****		. 43		.03				T.			30.00	****		T.	.01	.05	.08			. 10				1.20		1	7	
erry Cityhiladelphia	St. Lawrence	8		. 11	T.			T.	. 07	. 08			T.	. 1	5						. 03		T.					.1			4	š	-
otsdam	Raquette			.35			. 05			.25	. 08		. 05		. 21		. 09			. 43	. 18			. 00					. 1	£		. 28	5
anger School	Oswegatchie Raquette																								1								-
ochester	Genesee		. 20)	T.	. 11	. 13			T.		T.	1	T		. 07	T.		T.	. 01	. 17	. 14	. 02		T.			. 4	5 T.		3	5	
omulus	Oswego		T.				.35										. 08	3	T.	. 14	. 05	. 10			. 05	5		. 4		2			
cottsville	do						. 17		T.								06			m	10	· m					5	9	10	0	1	3	
kaneateles	do				1									1			. 00				. 10												1.
racuse	Raquette Lake Erie		. 10)	T.	. 07	. 40	T.	.02	T.		T.	T.	T.		. 03	.00	.01	.22	. 16	. 13	.00	T.	T.	. 10)		. 2	4 .0	2	3	1	-
upper Lake	Raquette		T.	T.	T.			T.	. 13	.02		.03		.07	7		. 02	2		. 20	.03	00	. 03		T.			0				1	
olusia anakena	Oswegatchie								.25	T.		T.	. 13	I.			T.	.00	1		1		1		1			. 4	9		3	4	-
atertown	Black		. 42	.01			. 07		. 12	. 25	.00	. 07	. 00	3 .10	T.		3	5	T.	. 45	. 14		. 02					2	1 .1	4	3	7	
edgwood	Oswego		.11	l			. 23	.01	T.			T.	.04	.0	3		. 0		T.	.36	. 07	T.	. 02		. 20	0		4	0 .0	5	1	8	
estfield	Lake Erie.		. 49					T.	. 10			T.	.00	3		T.	. 10	8	T.	.31	.09	. 17			T.			. 2		7		2	
orkoungstown	L. Ontario.																																
Vermont.																										-							-
urlington	L. Champlair	a	T.		т.		. 13		. 01	T.		. 02	T.	T.	T.		. 00	T.	. 12	. 62	T.	T.	T.		.0	2 .0	1	0	3		1	1	-
ornwall nosburg Falls	do		.20	. 18	m		.20		T	94		T.	.00	3 T	T		.03	T		.75	12		T.	T.	T	T		7	.0	9	2	0	
yde Park	do		11	1.	T.	****	.30	3		1.13	3		.0	4	1.	T	1.1	T		. 85	. 04			.0	6 .0	4		1	3 .1	1	2	8 T.	
orthfield	do		. 33				. 16	T.	. 07	T.			.0	1 T.	T.		T.		. 12	.85	T.		T.	.0	2 .10	0 T		2	8 T.		5	2	-
ells	do		RI				. 25	3	T	1			T				m	1	1	77	1		1	4	1 11	9		4	100		. 0	5	

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

‡ Precipitation for the 24 hours ending on the morning when it is measured.

† Precipitation is less than 0.01 inch rain or melted snow.

e wood sich c s t n

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 4, Lake Region.

-	1	-lasth			Wis	eonsin.						ort		N	lichiga	n—U	pper I	enins	ula.			M	lichiga	n—Lo	wer P	eninst	ıla.	
Date		uluth, Linn.	Flo	тепсе.	Gree	en Bay	. Milw	aukee	1	icago, Ill.	W	ayne, nd.	Esca	naba	Ev	ven.	Hou	ghton	. Mar	quette		t Ste.	Alı	ena.		ttle eek.	Cad	illac.
	Max	. Min	. Max	. Min	. Max	. Min.	Max	. Min.	Max	Min.	Max	Min.	Max	Min	. Max	Min	Max	. Min.	Max	. Min	Max	Min.	Max	. Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	18	. 18 18	42 34 39	14 14 24	48 37 42	26 26 29	38 40	40 27 26 31 37	56 42 45	45 30 30 37 42	54 43 48	42 34 34 38 38	43 43 36 41 44	39 18 20 29 37	41 34	31 16 15 31 33	43 34 36 37 40	15 15 33	42 38 35 38 41	17	41 42 33 39 41	30 16 16 32 32	34	37 26 21 34 32	53 53 37 44 55	31 30 37	43 49 33 42 43	24 21 31
6 7 8 9 10	34	- 9 4	25 26 31	14 11 2 - 2 17	36	13 6 6	39 38 34	19 18 11 10 23	38 34	23 20 13 11 29	59 36 37 29 42	27 22 19 12 25	44 27 21 31 37	15 15 2 2 2 17	15 35	7 7 7 8 6 10	20 26 14 31 39	5 6	33 26 16 32 39	14	48 30 17 34 38	15 14 - 2 5 13	33	23 21 9 12 25	57 34 36 28 35	27 23 17 13 25	51 32 34 29 35	21 18 11 10 27
11 12 13 14 15	26 38	20	26 36	- 3 - 8 7 14 27	19 34 43	19 23	41	5 2 20 28 36	45 47	8 3 21 31 37	35 16 40 47 44	11 5 12 26 35	17 13 27 36 39	- 4 13 20 28	16 24 44	- 3 - 4 - 2 7 24	10 15 25 32 36	11 16	12 14 27 40 39	12 19	18 13 22 33 37	$\begin{bmatrix} 4 \\ -6 \\ 12 \\ 20 \\ 32 \end{bmatrix}$	29 38	10 7 16 25 33	36 15 36 41 38	14 11 8 23 33	31 11 29 39 38	9 5 10 18 32
16 17 18 19 20	31 19 22	10	27 23	19 23 19 18 12	36 32 25		34	34 32 22 20 22	40 44 36 34 33	38 36 27 25 22	40 50 35 30 40	35 35 29 25 25	33 34 29 24 25	26 27 21 18 16	20	6 22 18 12 10	28 30 28 23 21	15 28 19 18 15	28 32 32 25 24	24 25 20 17 18	32 26 34 25 20	19 18 24 20 8	36 38 36 30 28	28 31 30 26 33	39 46 40 32 32	33 34 32 25 25	37 37 36 29 28	26 26 28 23 21
21 22 23 24 25	21 30 27	-11 18 17	16 32 31	13 0 - 1 17 17	20 31 33	5 20 22		16 10 21 24 32	31 31 41 40 43	15 18 24 22 32	26 32 35 39 41	20 19 16 24 26	25 17 34 31 41	17 5 12 22 26	30	10 0 3 15 15	20 17 32 22 33	13 1 6 20 22	25 18 35 25 39	111	15 23 31 30 36	3 7 5 23 23	28 24 31 30 44	23 15 16 26 26	26 25 34 33 40	21 15 13 23 23	28 24 31 30 38	21 12 13 23 19
26 27 28 29 30	26 36 28 32	15 5 17 16 10 16	28 39 36	25 18 15 14 13 22	32 26 38 37 36 36	26 18 18 21 18 22	40 27 47 42 39 42	26 19 25 31 28 33	38 31 48 41 41 41	29 21 24 34 34 35	42 31 42 40 37 42	27 19 19 33 35 30	32 27 33 35 35 37	27 17 14 21 20 22	31 25 41 33 30 33	19 14 8 10 3 10	32 30 37 35 32 34	24 18 24 23 18 27	34 27 41 36 38 38	26 24	35 31 36 34 35 35	31 21 22 22 22 30 29	36 33 37 38 37 42	30 23 24 27 31 30	35 33 39 38 36 41	25 27 21 31 33 32	37 33 39 37 34 35	29 22 21 24 29 28
Mns	26.6	9.2	31.1	13.9	34.8	20.0	38.1	23.5	40.4	26.3	40.3	25.7	32.0	18.1	28.7	12.0	28.8	16.4	31.3		31.1	17.4	35.7	23.9	37.6	25.0	34.6	21.5
		I	ower l	Michig	an.					Oh	io.									New	York.					Verr	nont.	
Date.	Det	troit.	Musl	regon.		inaw, t Side.	Cleve	eland.	Li	ma.	Sand	usky.	Tole	edo.	Erie	, Pa.	Buf	Talo.	Can	iton.	Roch	ester.	Syra	cuse.	Burli	ngton.	North	afield.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	53 53 38 48 55	36 29 28 37 37	54 53 40 45 53	34 30 27 37 33	53 54 37 45 56	34 25 25 35 33	53 57 40 44 60	35 34 34 35 40	57 57 42 60 61	37 32 34 33 28	58 58 41 47 62	36 34 32 36 39	56 55 42 59 58	37 31 29 36 37	49 57 40 46 57	32 38 35 37 39	47 52 40 46 59	26 39 33 38 35	30 48 34 40 51	2 30 20 25 29	44 53 39 45 57	28 39 34 34 34 34	41 53 40 45 51	25 39 31 35 33	35 50 49 43 45	14 35 24 30 31	29 50 46 46 44	6 17 22 25 27
6 7 8 9 10	58 34 35 28 41	28 25 13 13 26	53 40 39 37 39	29 24 19 19 33	55 37 38 29 38	27 22 14 15 27	60 37 37 29 42	29 28 20 16 28	35 37 29 37 38	25 18 13 25 19	60 36 37 30 42	30 27 18 14 28	58 36 37 30 42	29 24 15 14 26	60 34 37 28 42	34 31 19 19 27	56 36 39 32 44	34 30 16 16 29	59 32 34 30 42	28 23 3 -3 28	61 34 40 30 47	34 28 13 12 26	63 35 41 30 46	35 31 12 11 27	59 38 35 28 40	38 23 8 5 27	61 39 38 26 45	39 21 9 0 26
11 12 13 14 15	36 17. 37 41 41	14 11 12 27 32	37 20 38 43 45	15 11 20 31 36	31 16 34 45 39	10 8 16 24 35	38 18 39 46 46	18 11 12 29 33	23 40 46 47 42	6 11 25 32 35	37 17 41 46 45	16 10 13 29 33	36 18 41 45 44	16 9 13 27 32	38 22 34 40 46	22 14 14 29 35	41 19 34 39 46	19 14 15 32 36	39 19 23 35 42	16 12 14 20 30	41 22 31 38 46	22 14 15 30 36	42 24 31 38 47	24 14 15 30 33	40 22 24 33 41	20 14 9 18 32	41 24 23 32 40	24 13 12 20 21
16 17 18 19 20	40 50 37 31 33	32 33 31 25 24	41 43 38 32 32	32 33 32 25 25	37 47 37 31 29	31 33 31 26 25	39 50 45 32 36	37 37 32 26 25	52 42 33 38 37	36 27 23 24 16	40 51 40 30 36	36 36 29 25 25	41 51 40 32 38	34 34 31 25 24	40 49 47 35 34	35 35 35 27 27	39 46 53 37 32	30 30 37 27 26	38 23 48 35 31	16 11 20 28 11	39 44 51 43 29	31 27 40 29 26	38 43 48 47 30	28 24 40 28 25	41 33 46 40 34	19 14 33 32 22	38 29 40 42 33	21 13 29 32 23
21 22 23 24 25	26 28 31 35 38	20 19 17 26 26	29 26 37 34 48	25 19 19 29 28	29 24 33 31 40	18 15 15 23 23	30 33 31 33 41	20 18 16 26 24	28 30 30 27 33	18 16 11 22 23	29 32 33 34 40	18 17 16 25 26	29 32 32 38 40	17 16 16 24 26	32 32 32 34 41	25 19 20 27 26	30 34 32 34 40	26 22 21 30 29	11 29 27 25 35	0 2 16 10 17	28 33 30 34 41	23 24 18 29 30	28 34 28 32 38	18 19 19 23 29	22 29 28 24 31	7 6 17 15 13	25 30 30 20 30	8 4 12 5 3
26 27 28 29 30	39 35 39 39 37 40	26 25 21 31 32 32	38 33 43 42 37 37	29 26 26 34 33 36	33 32 41 42 38 40	28 25 27 -33 33 29	45 35 36 41 38 44	28 28 22 31 34 35	41 39 40 38 40 43	25 26 20 33 32 32	45 33 37 42 40 45	29 25 21 32 34 32	42 35 38 39 42 44	26 24 20 32 33 32	45 39 34 44 40 45	29 29 24 33 35 36	44 40 35 43 40 43	33 25 26 31 36 35	41 36 31 41 42 43	31 20 15 30 35 34	45 40 32 43 42 48	30 23 26 26 37 35	42 39 33 44 44 46	30 24 23 27 36 35	37 34 28 37 41 42	24 25 18 26 34 36	40 32 26 42 44	12 20 13 20 28 32
Mns	38.5	25.4	39.2	26.7	37.8	24.7	40.5		40.1				40.7		40, 4		40.4				40.3				36.4		36.7	

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

§ § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT NO. 5, UPPER MISSISSIPPI VALLEY.

GEO. M. CHAPPEL, District Editor.

GENERAL SUMMARY.

A December so pleasant as that of 1912 is but rarely experienced in the Upper Mississippi Valley. The weather of most of the month was largely a continuation of the agreeable features that marked October and November, being mild, dry, sunshiny, and free from storms of severity. Outdoor activities were carried on under highly favorable conditions, this being especially true of country districts, where the roads never were in better shape. South of Minnesota there was but little snowfall, this condition contributing in no small degree to the month's pleasantness.

month's pleasantness.

The following table presents in condensed form the leading features of climatological interest for the various parts of the district:

	7	Cemper	atur	е.		P	recipit	ation.		
Parts of States within District 5.	Mean.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Average snowfall.	Average number of days with precipitation.
North Dakota	16, 4 20, 1 23, 6 24, 0 29, 4 34, 9 32, 6 33, 7	+5.5 +5.2 +4.1 +5.2 +6.0 +4.0 +5.6 +4.3	60 56 55 57 64 65 58 64	-28 -25 -12 -16 - 5 3 1 - 2	0.58 0.90 0.30 1.83 0.84 0.48 0.81 0.81	+0.20 +0.13 -0.23 +0.38 -0.43 -1.41 -1.87 -1.20	3. 13 1. 93 0. 52 3. 20 1. 75 0. 98 1. 10 1. 60	T. 0. 16 0. 08 0. 78 0. 24 0. 00 0. 24 0. 31	5. 0 7. 0 2. 4 6. 0 1. 0 T. 0. 8 0. 3	6 4 7 4 3 6

TEMPERATURE.

The mean temperature was more than 3° higher than the normal over the entire district, excepting extreme southern Illinois. The average daily excess of mean temperature was greatest in the north, where it reached almost 9°. From Iowa northward this month was one of the half dozen mildest Decembers in the last 40 years. The mean temperature for the district was 26.1, or 5.2° higher than the normal. The means were above the freezing point over the southern third of the valley, Cairo, Ill., with 39.4°, being the warmest station. Over a considerable area in the far north the average monthly temperatures were lower than 15°. At Pembina, N. Dak., the average was only 7°; this was the coldest point from which reports were received.

The extremes of temperatures at all stations were well within the limits set in previous years. Only along and near the Mississippi River from below Davenport, Iowa, southward did the monthly highest temperatures exceed 60°, Warrenton, Mo., reporting the highest, 65°, on the

5th. The line of zero temperature extended slightly to the southward of the Illinois-Wisconsin boundary, and 10° was reached at all, except extreme southern Illinois stations. The lowest temperature reported was -28° , on the 11th, at Willow City, N. Dak. The occurrence of several distinct warm and cold spells caused considerable variation in the dates of the monthly highest and lowest temperatures at the individual stations. The 1st and 5th were the principal dates of the monthly highest, and the 8th, 11th, and 22d, of the monthly lowest temperatures.

PRECIPITATION.

The average precipitation for the district was 0.99 inch, or 0.41 inch less than the normal. As a rule there was a slight excess in the north and a decided deficiency in the south. Wisconsin was the wettest area, the fall over that State averaging close to 2 inches. Not much more than a third of the normal amount was received in Iowa, Illinois, and Missouri; at Subiett, in the last-named State, no precipitation whatever occurred. The greatest monthly amount was 3.20 inches, at Solon Springs, Wis. The distribution of the precipitation over those sections where nearly normal amounts occurred was good in point of time, but the third decade was the driest.

Snowfall.—Some snow occurred over practically the entire district, but over the southern third of it, except at and near Cairo, Ill., the amounts did not exceed a trace. In North Dakota, Minnesota, and Wisconsin the average fall was about half a foot. Solon Springs, Wis., reported the greatest amount, 22.0 inches. The northern third of the district was generally snow covered after the first week, but elsewhere bare ground was the rule the entire month.

RIVERS.

The Red River of the North, at Moorhead, Minn., was icebound the entire month, the thickness increasing from 4 inches at the beginning of the month to 14 inches at the close. The Wisconsin River froze over about the 12th. The Mississippi at Dubuque, Iowa, closed on the 12th, and remained partially closed until the end of the month. The ice, however, was only from 1 to 3 inches thick, and was soft most of the time. At the close of the month the river there was frozen over only in places, but there was much shore and floating ice. Below Le Claire, Iowa, the Mississippi remained open at the end of the month.

MISCELLANEOUS.

While the amount of sunshine was in excess of the normal probably over the entire district, the excess was not marked, except from Iowa southward. In parts of that State the percentage was above 70, and it was almost as high in southern Illinois. The average number

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of clear days for the district was 14; partly cloudy, 7;

Southwesterly winds prevailed in southern and northwesterly winds in northern sections The highest velocity reported was at the rate of 46 miles an hour from the north, on the 1st, at St. Paul, Minn.

DR. FRIEDRICH BRENDEL.

[By M. L. FULLER, Local Forecaster, Peorla, Ill.]

Friedrich Brendel, M. D., was a native of Erlangen, Bavaria, from whose university he graduated in 1839. He was a patriot in the German Revolution of 1848, and was compelled for that reason to leave the Fatherland in 1850. After two years' residence in St. Louis, Mo., he settled in Peoria, Ill., in 1852. His records of temperature and rainfall began in December, 1855, and continued practically unbroken for 50 years, constituting, with the subsequent work of the Weather Bureau station, the longest continuous record kept within the State of Illipois

Dr. Brendel was a physician of excellent standing, a botanist of note, author of a 90-page pamphlet on "Flora Peoriana," a man of scientific tastes, and of deep devotion to his work. It is related of him on the best of authority that in his later years, while seriously ill and lying day after day apparently unconscious, he would still rouse regularly about the observation hour and direct the nurses to read the thermometers. The records kept by such an observer possess more than ordinary interest. Dr. Brendel's death occurred August 10, 1912, at the advanced age of nearly 93 years. His records have been extensively used in compiling the climatology of Illinois, and the originals are in the Weather Bureau offices at Springfield and Peoria.

PROLONGED DRY PERIOD IN MINNESOTA.

[THOMAS A. BLAIR, observer, Minneapolis, Minn.]

The fall of 1912 has been notable in Minnesota for mild temperatures and deficiency of precipitation. Following a pleasant summer, marked by no long heated periods, and in which the average daily temperature for the months of June to September, inclusive, was 1.5° below the normal, the months of October and November prolonged the agreeable weather and shortened the winter by temperature departures in the opposite direction, the average daily excess in October being 1.7° and in November 5.6°, with an entire absence of cold waves. For October the average temperature for the State was 47.5°, which has been exceeded five times during the past 18 years; for November the mean was 33.9°, which has been exceeded but twice during the same period; likewise, the combined mean of the two months has been exceeded but twice.

But it is to the long dry spell and the general deficiency in precipitation that special attention is directed in this note. The deficiency began in September, amounting in that month to 0.49 inch, and was general except in the Red River Valley. October precipitation was below normal at every station in the State except Hallock, in the extreme northwest. The average amount was 0.97 inch, which equals the amount in the extremely dry year of 1910. The only less amount recorded was 0.25 inch, in 1895. In November the southeastern counties of the State received one good rain, on the 12th; the rest of the State and, for the remainder of the month, the entire State, received but very light precipitation,

amounting in general to less than 0.20 inch. Over a considerable portion of the State, principally in the upper Minnesota Valley, no amounts in excess of a trace fell during the month. At Minneapolis there was 0.08 inch, the least amount for November recorded in 77 years of observations in this vicinity. The State average for November was 0.36 inch, which is one-third the normal amount. Less amounts are recorded in 1903 and 1904. The total for the three months of September, October, and November was 4.36 inches. Only the years 1897 and 1910, with 3.97 and 3.94, respectively, had smaller averages. The year 1910 was the driest year on record, precipitation being deficient in all months except January; but in 1897, as in 1912, there was an accumulated excess at the beginning of September.

The area in which the drought was most marked extends from east to west across the central portion of the State, between the latitudes of St. Paul and Duluth. The following is a list of stations at which no measurable amount of precipitation fell for the periods indicated:

		~	
Alexandria	57 days	Sept.	26-Nov. 21
Beardsley	44 days	Oct.	12-Nov. 24
Bird Island	49 days	Oct.	13-Nov. 30
Collegeville	41 days		13-Nov. 22
Fort Ripley	41 days	Oct.	13-Nov. 22
Glencoe	54 days	Oct.	12-Dec. 4
Halstad	45 days	Oct.	30-Dec. 13
Hinckley	44 days		12-Nov. 24
Long Prairie	44 days		12-Nov. 24
Lynd	50 days	Oct.	12-Nov. 30
Milan	44 days	Oct.	12-Nov. 24
Montevideo	41 days	Oct.	12-Nov. 21
Morris	44 days	Oct.	12-Nov. 24
New London	50 days	Oct.	12-Nov. 30
Osakis	42 days	Oct.	12-Nov. 22
Pierz	44 days	Oct.	12-Nov. 24
Pipestone	54 days	Oct.	12-Dec. 4
St. Cloud	43 days	Oct.	13-Nov. 24
Stillwater	49 days	Oct.	13-Nov. 30
Taylors Falls	35 days	Oct.	21-Nov. 24
Worthington	31 days	Oct.	12-Nov. 11

Many of the same stations had much longer periods with amounts of less than 0.20 inch, as shown by the following table:

Alexandria	69 days Sept.	26-Dec. 4 0.17
Beardsley		
Bird Island		
Campbell		11-Nov. 24 0.02
Collegeville	53 days Oct.	13-Dec. 4 0.13
Crookston.	44 days Oct.	20-Dec. 2 0.13
Halstad	78 days Sept.	
Itasca State Park	36 days Oct.	30-Dec. 4 0.04
Long Prairie	56 days Oct.	12-Dec. 6 0.10
Lynd		12-Dec. 16 0.10
Milan		12-Dec. 4 0.10
Minneapolis		12-Nov. 30 0. 14
Montevideo	59 days Oct.	12-Dec. 9 0.16
Moorhead		6-Dec. 15 0.15
Mora	44 days Oct.	12-Nov. 24 0.02
New London		12-Dec. 4 0.06
New Ulm		12-Nov. 30 0. 11
Osakis	66 days Oct.	12-Dec. 16 0.18
Pierz		12-Dec. 31 0.19
Pine River Dam		12-Nov. 30 0. 19
Pipestone		12-Dec. 16 0.20
Roseau		31-Dec. 19 0.05
St. Cloud	49 days Oct.	13-Nov. 30 0.01
St. Paul	40 days Oct.	22-Nov. 30 0. 10
Sandy Lake Dam	44 days Oct.	12-Nov. 24 0.16
Taylors Falls	50 days Oct.	12-Nov. 30 0.13
Two Harbors	50 days Oct.	12-Nov. 30 0.14
Worthington		12-Dec. 4 0.15

The period of 44 days from October 12 to November 24, inclusive, was the most common one without measurable precipitation, but the average for the 21 stations of

the first table is 45 days. The extreme period was 57 days, from September 26 to November 21, at Alexandria. The extreme period with less than 0.20 inch was 81 days, at Pierz, from October 12 to December 31, and the average of the 28 stations was 55 days.

Such a prolonged dry spell has probably occurred only in the year 1910. During February and March of that year many stations in the southern part of the State received less than 0.20 inch, and several stations were without measurable rainfall for a period of 50 days. Severe droughts occurred in 1894 and 1900, but without long periods unbroken by showers. In the drought of August and September, 1908, the average duration for the 21 stations where the drought was most marked was 25 days and the longest period at any station with only a trace of precipitation was 31 days.

In contrast with the droughts of other years just mentioned, which caused immense damage to crops, the long

dry spell of 1912 was rather a blessing than an injury. It began after the crops were matured, and gave unusually favorable conditions for harvesting, thrashing, and storing them and for fall plowing. The December business summary published by the Northwestern National Bank of Minneapolis says:

Before the harvest was completed prolonged rains during a period of six weeks caused delay and some damage to the quality of cereals in the shock. These rains were followed by a long dry period with unusually mild temperatures. The farmers have generally taken advantage of this condition to get much of the plowing done that usually must wait until spring. It seems not unreasonable to predict that the improved condition of the soil for next year, on account of the timely plowing, will result in a yield for 1913 sufficiently increased on this account to make up all losses of this year caused by the rains.

The mild temperatures and absence of storms were also of great aid to the transportation companies, enabling them to handle the large crops with less than the usual congestion and car shortage.

Table 1.—Climatological data for December, 1912. District No. 5, Upper Mississippi Valley.

		-	ears	Temp	erature	, in d	egre	es Fahi	renhe	eit.	Preci	pitation,	in inc		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	cloudy days.	Prevailing wind ction.	Observers.
North Dakota.	4																			
menia	Cass	954	15	15.8	+ 3.3 + 4.0	58 39	81	- 14 - 26	14	60		+ 0.45 + 2.83	0.37	8.0	5 15	12 5	9	15 17	nw.	C. E. Wood. W. M. Mills.
ottineauowbells	Bottineau Burke	1,638 1,958	17	12.0	7 4.0	30		- 20	8		*****									G. H. Phelps.
ando	Towner	1,488	11 6	15. 2 18. 6	+ 8.8	47	9	- 18 - 18	11 8	46	0.11	- 0.33	0.04	3.7	5	20 23	7 2	6	nw.	E. T. Judd. H. C. Kaschau.
evils Lake	Divide	1,482	7	16.2	+ 8.2	46	9	- 14 - 21	11	53 47	0.74	+ 0.25	0.24	6.2	8	12	7	12	nw.	U. S. Weather Bureau
onnybrook	Ward	1,760	13	18.6	+ 8.2 + 3.5 + 2.8	43 39b	9	- 21 - 25b	8	56 51b		-0.06 + 0.27	0.25	6.0 5.4	6 8	19	5	7	nw.	C. J. DeVore. C. E. Goodsell.
dmore	Rolette	1,524	15	12.0	+ 2.0	990		- 20		31			0.10							M. M. Van Osdell.
essenden	Wells	1,610	10	18.8		48	9	- 16	8	54	0.30	0.25	0.13	2.0 0.8	4 5	14	8 2	12	nw.	G. T. Seymour.
orman	Sargeant Walsh	1,249 827	18	19.3 14.6d	+ 5.1 + 7.1	44 431		- 13 - 22	111	44 52 f	0.40	- 0.25 - 0.08	0.02	7.0	5 7	12	3	16	se.	A. Maltby. A. R. T. Wylie. W. A. Christianson.
ranville	McHenry	1,504	6										0 20	10.0				****		W. A. Christianson. J. Moffatt.
annah	Cavalier	1,568	7 4	10.1 j 13.6			9 27	- 23 i - 19	8 8	41 41	1.00		0.30	10.0	5	20	5	6	nw.	Geo. Dale.
ansboro	Traill	901	7	18.5		49	9	- 10	8	39	1.08	******	0.30	10.0	6 9	10	11 20	10	nw.	F. E. Mayall. C. R. Pettes.
akota	Nelson	1,579 1,615	17	14.0		36	71	- 20	11	40	0.70		0.25	10.5		5				J. Woolner.
arimore	Grand Forks	1,134	17	15.4	+ 4.1	44	9	- 15	8	47	0.69	+ 0.46	0.32	2 5	13	14	5	12	nw.	J. M. Freeman.
isbon	Ransom	1,091 1,640	18	19.5	+ 5.1 + 8.8	53 45	30	- 12 - 21	11 8	55 54	0.35	- 0.13 - 0.06	0.30	3.5	3	19	20	77	nw. nw.	W. S. Adams. N. P. Swenson.
c Kinney	Ransom										T.		T.	T.	0	11	12	8	SW.	Martin Reinholt.
lanfred	Wells	1,605 975	11 16	18.6	+ 5.7	47	9	- 15 - 11	8	45 39	0.87	+ 0.16	0.38	6.0	9	17	8	6	nw.	P. B. Anderson. W. C. Gould.
fayville	Traill			*****							0.27		0.25	3.2	2	11	7	13	W.	Hj. Edman. W. J. Ellison.
finot	Ward	1,557	14	21.5	+ 9.4 + 5.3	48 45°	9	- 12 - 17a	8	47 55a	0.24	-0.09 +0.16	0.08	6.5	8 5	13	6	12	w. nw.	S. S. Marsh.
linto	Walsh Barnes			21.0		. 50	13	- 7	10	38	0.36	- 0.10	0.22	2.5	5	12	6	13	W.	J. J. Taylor.
ark River	alsh	998	9	16.8	- 0.8	32		- 18 - 18	8 7	39	0.50	0 99	0.20	3.0	3	5	11 9	15 11	nw.	P. J. Prochaska. C. W. Shumaker.
embina	Pembina		14 20	16.8	+ 4.7	470	17				0.80	- 0.22 + 0.36	0.30	8.0	5					J. A. Power.
owner	McHenry	******	. 4				9	- 18	8	49	0.25		0.10	2.5		9	12 8	10 12	sw.	B. Bagley. U. S. Weather Bureau
niversity	Grand Forks	830 962		16.5	+ 5.1	46 -60	9	- 16 - 9	8	50	T.	- 0.12 - 0.37	0.25 T.	4.5	0	18	5	8	SW.	Fred E. Smith.
Valhalla	Pembina	966	8	16.0		41	9	- 19	1 8	51	0.80		0.40	8.0		12	8	11	n.	Ivanhoe Lee. W. A. Meddaugh.
Vesthope	Bottineaudo		19		+ 2.0	43	9		8	46 54	0.42	+ 0.49	0.15	9.0	6 7	16	13	2	nw.	M. A. Ostby.
Minnesota.		-,	1																	
	Preshown	1,229	21	24 3	1 5 7	50	1	- 5	12	30	1.50	+ 0.42	0.60	3.7	6	6	18	7	sw.	Edward Carey.
lbert Lea	Freeborn Douglas	1,391	18	20.2	+ 5.7 + 7.9 + 5.8	43	4	- 10	8	50	0.30	- 0.28	0.20	3.0	2	14	5	12	nw.	P. O. Unumb.
ngus	Polk	870	10	14.8 15.2	+ 5.8		9		8	40	0.32		0.20	3.2		9 7	15	16	S. SW.	John Nadvornik. Jens Nelson.
BagleyBaudette	Clearwater Beltram	1.084	2	16.8		43	14	- 18	8	41	0.41		0.13	5.0	7	14	5	12	nw.	J. A. Gjelhaug. G. L. Fitzgerald.
Beardsley	Bigstone	1,090	16	23.6		51	14		12	42	0.20	- 0.27	0.20	2.0	1 7	13	8	10	nw.	G. L. Fitzgerald.
BemidjiBird Island	Beltrami Renville	1,400	9 22		+ 6.2	53	1	- 9	22	43	0.33	- 0.27	0.16	2.8	5			18	nw.	C. W. Warfield. Dr. F. L. Puffer.
Brainerd	Crow Wing	1.215	5		+ 4.7		14	_ 11	12	46	0.77	0.50	0.43	2.2	. 11 8	18		12	se.	Theodore Miller.
aledonia	Houston		19	20.1	+ 4.7		1 14		22 12 12 22	39 53	1.90	+ 0.52	1.05	6.5		12	2	17	nw.	W. D. Belden. J. T. Neisess.
ampbellass Lake	Cass	1,300	5								0.67		0.23	17.5	6					. C. W. Burns.
ollegeville	Stearns		19 23	23.8	+ 5.3	49	1 9		12	38 50	0.50	+ 1.09	0.27	8.0		12		15	nw.	F. Tembreull. A. G. Andersen.
rookston	Becker		16	15.4	+ 5.3	41	14	- 16	12	54	0.75	+ 0.24	0.40	7.7	5	16	1	14	nw.	A. G. Andersen. G. W. Peoples.
Cly	St. Louis		. 1	17.0	+ 4.5	. 42	14		8		0.89	- 0.04	0.29				12 12	11 6		Iver Wisted. W. F. Wherland.
airmont (near)	Martin	1,003	14																	. A. B. Moulton.
armington	Dakota	902	24	22.6	+ 3.6	51 45	1 4		22		1.36	+ 0.13 + 0.36	0.44		12			11 12	nw.	E. D. Akin. C. E. Kissinger.
Fort Ripley	Ottertail Crow Wing			18.2	+ 5.4	. 46	15	- 13	22	45	0.56	- 0.10	0.16	6.0	6	13	0	18	S.	J. J. Tucker.
osston	Polk	1,289	2	15.6		. 39	10	+ - 21	1 8	39	0.77		. 0.20		11	11 20		11	8.	O. N. Hem. L. V. Koos.
GlencoeGrand Meadow	McLeod Mower	1,338	24	24.0	+ 5.8 + 5.2	46		1 - 5	12		1.57	+ 0.10	0.48	3.8	7	10	14	7	SW.	C. F. Greening.
Gull Lake Dam	Cass	1,215	1	21.0		. 46	14	+ - 10	8	† 42	0.78		. 0.26	7.5	7	8	9	14		U. S. Engineer Corps D. A. Robertson.
Hallock	Norman	. 870	6						1 8	42	0.65	- 0.08	. 0.27	4.5	4	14	5	12		A. G. Holstrom.
Tinckley International Falls	Pine	1,050	7	20.2		. 48	1	- 13	12	37	0.75		. 0.30	6.5	5	4	12	15	SW.	W. R. Newman.
nternational Falls tasca State Park	Koochiching	1,112	9			. 40	14			36	0.58					10		21 18	n. nw.	C. Ardies. J. A. Stillwell.
Lake Crystal	Blue Earth		- 4																	. E. D. Baker.
eech Lake Dam	Cass	1,301	24			49			22		1.00						15	14	sw.	U. S. Engineer Corps O. C. Olson.
Long Prairie	Koochiching	1,299	20	21.2	+ 7.2	47	14	- 10	8	39						- 13	7	11	nw.	A. L. Sheets.
Lynd	Lyon	. 1,175	19	24.4	+ 7.2	56	14	- 10	22	46	0.33				. 6	17		10	nw.	J. W. Rouse. C. G. Staley.
Mankato	Blue Earth Hennepin	1.023	17	22.4	+ 4.8	50	1	- 9	22	36		+ 0.59				14		12		G. W. Richards.
dilaca	Millelacs	. 1,072	13						1									19		O. K. Opjorden.
Milan Minneapolis	Chippewa Hennepin	955		22.6	+ 6.6	54			12 22	† 43 35		+ 0.98	0.76		3 9	11		19		U. S. Weather Burea
Montevideo	Chippewa	. 900	22	23.6	+ 3.7	54	4	- 7	22 11 22 12 11	43	0.45	- 0.28	0.18	4.8	3 6	1 14	10	7	SW.	L. G. Moyer.
Moorhead	Clay Kanabec	. 935	31	20.6	+ 6.8	44		- 10	122	37	0.95		0.45			14		14		U. S. Weather Burea Hans Peterson.
Mora	Stevens	. 1,170	27	20.8	+ 4.9	46	14	- 9	11	36	0.35	- 0.27	0.20	4.9	0 6	16	6	9	nw.	D. T. Wheaton.
New London	Kandiyohi	. 1,215	18	20.4	+ 5.5	48	1	- 10	12	37		- 0.17	0.30		2	1 18		5	SW.	Harold Swenson. N. O. Tyrholm.
New Richland	Waseca Brown			21.8	+ 4.9 + 5.5 + 5.0 + 3.5	52	14	- 5	12	45	0.93	+ 0.20	0. 25	5.2	2 7	7 3	13	15	nw.	N. O. Tyrholm. A. L. Henle.
	T	9 040		1 00 0		. 44		+- 11	1 22	40	0.28		. 0.14	4.1	1 7	7 6	6 4	21		J. B. Johnson.
New Ulm	Douglas	1,343	4	20.0	1 0			9.75	0	EF	0 70	1 0 00	0 20	7 6	3 6	2 6	0	1 1 5	33.537	Dr P A Walling
New Ulm Osakis Park Rapids	Hubbard	. 1,426	22	15.0	+ 3.5	42	14	- 17 - 11	b 12	55	0.79		0.13	2.	5 2	8 8	11	9	nw.	Dr. P. A. Walling. E. H. Kerkhoff.
New Ulm	Morrison Crow Wing	1,426	25	15.0	+ 3.8 + 3.8 + 5.8	42 45 42	b 14	- 17 - 11 - 14	22 8 12 22 22 22	44	0.79 0.17 0.46	- 0.21	0.13	7.0	5 2		11	14	nw.	Dr. P. A. Walling. E. H. Kerkhoff. U. S. Engineer Corps Do.

TABLE 1.—Climatological data for December, 1912. District No. 5 -Continued.

	, ,		years	Tem	peratur	e, in	degr	ees Fa	hren	heit.	Pre	cipitatio	n, in ir		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	Prevailing wind tion.	Observers.
Minnesota—Continued																				
Redwood Falls. Reeds Landing. Rochester. Roseau. St. Charles St. Cloud. St. Paul. St. Peter. Sandy Lake Dam. State Sanatorium. Stillwater. Taylors Falls. Three River Falls.	Wabasha. Olmstead Roseau. Winona Sherburne. Ramsey Nicollet. Aitkin Cass. Washington. Chisago. Pennington	681 991 1,040 850 1,020 940 825 1,234 694 759	16 7 3 21 35 41 17 19 4 6 5	22.4 12.6 25.5 21.5 23.2 25.0 17.8 18.7	+ 5.3 + 4.4 + 3.9 + 5.2 + 7.8	48 40 48 49 ^b 49 51 41 44	1 9 1 2 1 1 1† 14	- 5 - 6 - 19 - 4 - 10 ¹ - 5 - 7 - 14 - 14 - 10 - 25	124	41 54 34 43 ^b 35 40	0.82 1.54 1.05 1.12 1.22 1.32 1.48	+ 0.02 + 0.29 + 0.48 + 0.39 + 0.30	0.30 0.73 0.59 0.30 0.55 0.21 0.56 0.40 0.51 0.35 0.41	6.5 4.9 3.5 5.0 4.0 3.7 9.9 9.5 8.9 12.2 11.0 9.7	3 7 4 2 5 9 8 5 7 8 7 5	18 11 16 6 16 7 ^b 11 14 4 10 19 12 20	3 0 6 12 7 9 7 7 14 1 0 5 2	10 20 9 13 8 13 ^b 13 10 13 20 12 14 9	nw. se. se. se. se. nw. w. nw. w. n. s. n.	Hockett Bros. John Deschneau. Mary P. Leslie. M. J. Hegland. 8. W. Gleason. J. H. Capser. U. S. Weather Bureau. State Hospital. U. S. Engineer Corps. Dr. L. B. Ohlinger. Oscar Ostrom. Minneapolis Gen. Elec. Co. E. W. Lown.
Tracy Warren Warroad Winnebago Winnibigoshish Winona Worthington	Marshall Roseau Faribault Itasea	1,069 1,100 1,300 700 1,593	2 14 24 16 17 16	12.2 24.8 17.2 27.5 21.6	+ 5.4 + 4.3 + 6.1 + 2.0 + 4.8	46 35 56 44 51 49 49	14	- 19 - 18 - 7 - 12 - 1 - 9 - 9	8 8 12 22 12 6 22	46 38 43 38 34 47 38	1.49 1.45 0.16	+ 0.19 + 0.72 + 0.27 - 0.64	0.30 0.20 0.70 0.58 0.47 0.09 0.50	7.2 6.5 2.0 14.1 3.4 3.0 5.1	5 5 3 9 8 2 4	16 16 15 4 17 20 15	8 7 10 6 4 3 9	7 8 6 21 10 8 7	nw. sw. w. nw. s. nw.	E. D. Davis, P. H. Holm. G. A. Sawyer. H. H. Haight U. S. Engineer Corps. P. C. Myers. M. P. Mann. W. C. Rowell.
South Dakota. Milbank	GrantRoberts	1,148 1,202	21 6	22.4 24.7	+ 4.1	55 54•	14 15	- 8 - 12	8† 19	53 42•	0.52 0.08	- 0.23	0.22 0.04	4.0 0.8	6 3	18 21	5 0	8 10	nw. nw.	Miss Mary Patridge. George Gray.
Wisconsin. Antigo Barron Beloit. Big St. Germain Dam. Brodhead Burnett. Jornell. Oottage Grove Darlington Deerskin Dam Delavan. Dodgeville Downing Sau Claire Jien Flora Grand Rapids. Frantsburg Jancock Jatfield Janyward Jillsboro.	Langlade Barron Rock Vilas Green Dodge Chippewa Dane Lafayette Forest Walworth Iowa Dunn Eau Claire Rusk Wood Burnett Waushara Jackson Sawyer Vernon	1,115 750 1,590 1,590 812 880 993 888 867 1,685 920 1,220 983 800 1,475 1,021 1,095 1,091 973 1,107	18 21 46 2 14 8 0 0 1 16 2 21 10 0 13 21 20 18 21 21 21 21	28. 6 20. 6 29. 6 27. 4 28. 9 20. 0 28. 7 20. 2b 24. 0 20. 4 24. 4 26. 4 23. 2 20. 2 25. 8	+ 6.5 + 4.7 + 4.1 + 5.8	52 43 57 49 ^b 48 45 50° 50 48 50 50 48	2† 29 1 1 1 1 1 4 2 1 4 1 4 1 † 5	- 13 - 9 - 1 - 9 - 1 - 1 - 1 - 3 - 3 - 10 ^b - 5 - 12 - 4 - 4 - 12 - 6 - 12 - 16 - 16 - 16 - 17 - 18 - 1	12 12 12 12 12 12 12 12 12 12 12 12 12 1		1.50 2.37 1.76 2.06 1.00 1.75 2.03 1.44 1.22	+ 0.66 - 0.66 - 0.42 + 0.45 - 0.17 + 0.89 + 0.69 - 0.23 + 0.41 + 0.67 + 0.37	0.60 0.75 0.08 0.56 0.55 1.08 0.46 1.50 0.60 0.58 1.59 1.20 0.62 0.76 0.92 0.92 0.92 0.93 0.93	12. 2 10.0 1.0 10.8 1.1 T. 2.3 1.0 5.5 2.5 13.0 8.7 10.1 3.0 4.0 4.0 4.0 4.0	9 7 4 11 4 3 3 7 9 4 9 4 3 8 6 6 7 2 6 5 7 4 9	13 13 18 6 6 11 9 10 17 18 6 6 12 11 15 7 12 20 16 3 8 14	15 7 4a 5 3 15 8 12	9 12	SW.	Elton C. Larzelere. Wm. A. Kent. Smith Observatory. Fred Hessen. Hector D. Kirkpatrick. George W. Smith. Brunet Falls Mfg. Co. John E. Mellish. F. J. O'Neill. Wm. E. O'Neal. Elwood S. Austin. Thomas Gibbon. Eugene F. Stoddard. Robert D. Whitford. G. A. Durgin. Willis B. Raymond. Chester Ahlstrom. Frederick B. Hamilton. Walter S. Woods. A. E. Johnson. Entil V. Wernick.
win Lakes Dam alley Junction iroqua. udesare. atertown aukesha	Langlade. Vilas. La Crosse Jefferson Grant. Oneida Dane. Wood Juneau. do. do. Taylor Lincoln Oneida. Buffalo. Dane. Grant Clark St. Croix Polk Price. Columbia Wood Crawford Sauk Price. Columbia Wood Craylor Craylor Clark St. Croix Olik Polk Price. Columbia Wood Craylor Craylor Craylor Columbia Wood Craylor	897 1, 070 1, 592 974 1, 276 962 862 974 1, 426 1, 267 1, 604 738 1, 226 696 996 990 61, 492 809 628 809 1, 550 1, 551 1, 104 1, 082 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 104 1, 108 1, 109 1,	2 40 21 21 4	28. 4 27. 6 • 19. 6 19. 6 27. 8 22. 4 26. 8 22. 2 23. 2 19. 8 24. 0 27. 4 22. 2 23. 0 21. 8 22. 2 23. 0 21. 8 22. 6 28. 4 20. 8 21. 6 28. 4 29. 6 20. 8	+ 4.6 + 5.7 + 6.3 + 5.2 + 7.4 + 6.4 + 4.3 + 3.9 + 5.9 + 7.4 + 3.2 + 5.3 + 6.3 + 6.3 + 6.4 + 5.4 + 5.4	48 46 48 43 48 44 50 50 53 50 48 42 42 51 49* 52 52 42	1 2† 5† 14 5 14 14 14 15 5 3 1 1 1† 6 5 1† 1 6 1† 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 10° - 1 - 4 - 13 0 0° 0° - 8	12 12 12 12 12 12 12 12 12 12 12 12 12 1	32 27 37 41 32 39 30 35 38 35 32 28 40 32 28 36 37 38 41 36 36 37 38 41 36 37 38 38 38 38 38 38 38 38 38 38 38 38 38	2.13 1.89 1.23 2.22 2.19 1.35 2.22 2.11 1.45 1.145 1.145 1.133 1.133 1.133 1.133 1.133 1.146 1.133 1.146 1.133 1.146 1.1	+ 0.22 - 0.35 + 0.26 + 1.32 + 1.30 + 0.88 + 0.49 - 0.08 + 0.80	$\begin{array}{c} 0.70 \\ 0.53 \\ 0.60 \\ 0.47 \\ 0.65 \\ 0.95 \\ 0.97 \\ 0.40 \\ 0.38 \\ 1.09 \\ 0.78 \\ 0.84 \\ 0.99 \\ 0.78 \\ 0.84 \\ 0.99 \\ 0.78 \\ 0.80 \\ 0.80 \\ 0.60 \\ 0.55 \\ 0.90 \\ 0.50 \\ 0.$	2.5	9 10 7 3 12 8 10 4 6 6 6 6 6 11 9 6 6 6 6 6 11 11 4 7 7 6 6 6 6 11 11 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	13 14 8 13 12 4 4 16 9 18 7 7 7 10 14 13 5 10 20 13 17 4 7 7	12 7 7 12 1 8 14 9 0 0 12 6 6 10 0 0 18 16 6 7 6 7 4 1 3 3 4 4 1 6 6 7 4 4 6 6 7 4 4 6 6 6 7 4 4 6 6 6 7 4 6 6 6 6 7 4 6 6 6 6 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	17 9 9 9 19 15 9 12 13 15 16 8 8 15 10 11 8 10 22 22 22 20 8 15 10 11 11 11 11 11 11 11 11 11 11 11 11	SW. SW. SW. S. S. W. DW. DW. SW. DW. DW. SW. SSW. S	Edward S. Koepenick. U. S. Weather Bureau. S. Newton Dexter Smith. Edward Pollock. Louis Frank. U. S. Weather Bureau. Agr. Exper. Station. Frank Evans. Eugene L. Hitchcock. Charles H. Johnson. Wm. Zeit. Wm. T. Hunter. Benjamin W. Applebee. Dr. Charles Hebard. W. M. Lewis. Wm. Hessler. Wm. Hessler. Wm. Hessler. Wm. Hessler. Franc A. R. Van Meter. Charles W. Staples. Flambeau Paper Co. James H. Martin. Nekoosa-Edwards Pa. Co. James A. Gillis. Wis. River Power Co. Joseph G. Lash. Brinelander Power Co. Harrison B. Chamberlin. John M. Sayles. Horaco A. Bresse. W. Humphrey Scott. Postmaster. Lyman Haskins. Victor Extrom. F. B. Moody. Albert D. Hansen. Frederick Muermann. Frederick Muermann. Frederick Muermann. Frederick J. Salick. Carroll Collège. Geo. H. Halder. Miss Etts Stiles.

Table 1.—Climatological data for December, 1912. District No. 5—Continued.

			years	Temp	erature	, in d	legre	es Fah	renhe	eit.	Prec	ipitation	, in inc	ches.	days,	-	Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	tal snowfall, unmelted.	or m	Number of clear days.	80.8	N u m b e r o f cloudy days.	wind n.	Observers.
Iowa.		070	14	20.0		00			10	47	0.00	0.24	0.00	1.0	1	18	8	5	sw.	J. I. Chenoweth.
Ibia		959 1,213	14 38	30.8 26.6	+5.8 + 6.5	60 52	5	- 1	12 22	47 33	0.80	-0.34 + 0.20	0.80	1.0	5	17	8 7 7	5	nw.	Dr. F. T. Seeley.
Ita	Buena Vista	1,513	21 36	25.8	+ 4.4	54	1	- 1	8	42	0.87	- 0.06	0.44	0.5	5 3	17 14	7	7	nw.	David E. Hadden. Conrad Schadt.
	Iowa Story	721 926	36	30. 2	+ 7.6 + 7.9	55 59	5 28	2 2	12 12	36 39	0.97	- 0.48 - 0.08	0.64	T.	5	7.2	10		SW.	Iowa State College.
axter	Jasper	998	12	29.5	+ 5.3	58 57	28	- 2	12	37	0.67	- 0.22	0.37	0.1	5	23	4	4	Str.	W. R. Vandike.
elle Plaine	Benton	886	22	30.8	+ 7.1	57	28	1	12	36	0.76	- 0.77	0.52	0.8	9	24	1	6	SW.	O. Burrows.
elmondloomfield	Wright Davis		5	26. 2 33. 6		51 61	28	- 2	12† 12	34 41	1.02		0.50	3.2	5	10 21	16	5 9	nw.	Geo. P. Hardwick. Albert Power.
onaparte	Van Buren		21		+ 5.2	60	5	4	12	34	0.54	- 1.49	0.43	T.	3	****				B. R. Vale.
00000	Boone	1,134	7	27.5		57	28	0	12	47	0.24		0.24	T.	1 6					C. F. Henning.
rittuckingham		1,236	15 12	25.8	+ 6.7	50	1†	- 5	22	36	0.56	+ 0.38	0.57	2.3 T.	1	14 16	8	9	S. SW.	L. M. Goodman. J. S. Guynn.
urlington	Des Moines	544	16	31.3	+ 4.2	60	5	4	12	43	0.71	-0.84	0.35	T.	3	21	7	3	SW.	Max. E. Poppe, ir.
arroll	Carroll	1,265	22	29.4	+ 6.0	53	1	- 1	12	51	0.58	- 0.41	0.53	0.5	2	18	6	7	SW.	Mrs. Jos. J. Wolfe.
edar Rapidsharles City	Floyd	733 1,015	30 21	28.9	+ 3.9 + 6.4	54 52	28	- 3	12† 12	43 36	0.69	- 0.81 - 0.28	0.69	T.	8	18	13	9	w. nw.	R. S. Toogood. U. S. Weather Bureau
lear Lake	Cerro Gordo	1,241	14	27.0	+ 6.6	50	1+	- 1	22	35	0.75	+ 0.12	0.40	0.5	3	28	0	3	nw.	Oscar Stevens.
linton	Clinton	593	45 11	31.2	+ 5.9	55	5	2 3	12 12	34		- 0.54 - 0.98	0.57	0.5	5 2	13 22	12	6 5	SW.	A. E. Reed. J. B. Johnston.
olumbus Junction		595 580	41	32.4	+ 6.5	58	5 5	3	12	35	0, 48	- 0.98	0.28	0.5 T.	6	15	9	5 7	SW.	U. S. Weather Bureau
ecorah	Winnishiek	875	19	27.4	+ 6.4	48	1	- 3	12	33	1.28	- 0.08	0.67		5					. F. H. Baker.
elaware	Delaware		21 34	28.5	+ 7.1	52 58	6	- 1	12	41 35		- 0.31	0.49	0.1	5 3	15	10	6 7	SW.	William Ball, U. S. Weather Bureau
es Moines	Dubuque	861 639	39		+ 6.0 + 5.7	55	28	1	12	35		- 1.01 - 0.72	0.22	0.6	7	13	7	11	Sw.	Do.
arlham	Madison		10	31.0	+ 8.0	52	134	- 1	12	39	0.40	-0.90	0.25	1.0	3	20	4	7	SW.	George Phillips.
lkader	Clayton	727	33	27.6	+ 6.0	50	5		12 22	39	0.88	- 0.95	0.56	1.0	5	14	11	6	nw. se.	Chas. Reinecke. H. A. Moore.
lmastherville	Emmet	1.298	17	24.6	+ 6.4	55	1	- 0	74	45		+ 0.63	0.60	4.0	3	18	7	2	S.	A. O. Peterson.
airfield	Jefferson		28	32.2	+ 7.1	57	5	50		36°	0.44	- 1.34	0.43	2.5	3	24	1	6	nw.	R. M. McKenzie.
ayette		1,003	22 18	26.5	+ 4.9	50	5	- 2	12 22	31 40	1.21	- 0.28 + 0.22	0.78	0.5	4	18	10	7	nw.	R. Z. Latimer. J. A. Peters.
orest Cityort Dodge	Webster	1,126	12	26.8	+ 4.3	53	28	0	111		0.88	+ 0.42	0.45	T.	4	23	0	8	nw.	J. F. Monk.
ort Madison	Lee	516	63								0.55	- 1.38	0.30	T.	2	18	4	9	SW.	Miss L. A. McCready. J. L. Wylie.
ilmanrand Meadow	Marshall	1,052 1,180	13 21	26.6	+ 5.1	48	2	- 4	12	33	1.36	- 0.10	0.50	1.5	9	14	7	10	SW.	F. L. Williams.
rinnell	Poweshiek	1,023	20	31.7	+ 7.3	58	28	0	12	36	0.25	- 0.92	0.15	0.2	3	119	7 5	7	SW.	D. W. Brainard.
rundy Center	Grundy	976 1,077	21 17	30.0	+ 7.4	56	28 28	0	12	34 36	1.22	+ 0.04	0.57	T.	3	22 20	5 5	6		J. B. Calderwood. D. G. Beardsley.
uthrie Center	Franklin		22	28. 4	+ 6.8	56	28	0	12	35	1.01	- 0.24	0. 53	0.9	6	12	13	6		E. C. Grenelle.
lumboldt	Humboldt	1,095	24	27.3	+ 4.0	54	1	- 3	20	40		+ 0.11	0.80	2.0	4	24 22	3	4	SW.	J. P. Peterson.
ndependence	Buchanan Warren	921 969	48	28.6 31.9		54 57	28 28	0 3	12 12	36	0.64	-0.72 -0.86	0.46	T. 0.6	3	19	3			R. E. Dudley. Prof. J. L. Tilton.
owa City	Johnson	683	52		+ 4.5	59	14	0	12	48	0.75	- 0.90	0.75		1	20	3	8	nw.	Prof. A. G. Smith.
owa Falls	Hardin	1, 170	19	25. 4	+ 4.3	50	1	0	12	40		- 0.31	0.43		5	17 19	7	7		J. B. Parmelee.
efferson	Greene		13	29.6	+ 5.1	. 58 64	28	6	12 12	38 40	0.50	- 0.38 - 1.37	0.24	0.3 T.	2		5	6	SW.	Ora M. Hall. U. S. Weather Bureau
eosauqua	Van Buren	644	20	30.8	+ 3.4	61	5	4	12	44	0.37	- 1.13	0.32	1.0	2	15	9	7		. J. H. Landes.
Cnoxville	Marion Warren		17	32.6	+ 6.1	60	5	5	12	34	0.82		0.52		4	17 19	8	9		Casey and Bellville. J. B. Alter.
ansing	Allamakee	632									0.68		. 0.54	0	5					. Chas. R. Serene.
e Claire		576	12	*****							1.28				5	10				Miss M. T. Disney.
farshalltownfason City		947 1, 132	20 15		+ 4.7	59	28	- 1	12	51	0.83	- 0.33 + 0.08	0.47		. 5		8 5			Jacob Eige. J. S. Mills.
Ionroe	Jasper		1	31.4		. 58	28		12	41	0.53		. 0.44	T.	3	19	5	7	S.	J. A. Dibel.
fount Pleasant	Henry	729	31		+ 5.7	59	5	4	12	34		- 0.33			3		7	7		J. W. Edwards. William Molis.
fuscatine	Chickasaw	1.169	52 15		+ 6.5	48	1	- 3	12	34	1. 12	-1.28 + 0.19	0.91		- 0		2	ii	. w.	A. F. Kemman.
Vora Springs	Floyd	1,064		. 28.9		- 57	28	- 5	22	42	1.28		. 0.65	0.6	6	19		5	S.	Arthur Betts.
Northwood	Worth	1,122 760	16 14		+ 4.1 + 7.8			- 4	22 12	32 38	1.75	+ 0.65	0.55		8	16 21	9			Chas. H. Dwelle. Dr. F. W. Port.
)sage	Jones Mitchell	1, 184	25	26.4	+ 6.8	51	28	- 2	12	33	0.96	-0.04 -0.39	0.60		2	19	5	7	S.	Lester Coonradt.
skaloosa	Mahaska	843	36	31.0	+ 5.1	58	5	3	12	36	0.69	-0.57 -0.21	0.66	1.6	3	22	1	8	SW.	Joseph Boyd.
ella.	Wapello Marion	649 877	17	34.8	+ 7.0 + 5.9	62 58					0.66	- 0.21	0.40							Chester Potter. J. H. Ver Steeg.
erry	Dallas	975	11	31.1	+ 6.9	59	28	† 2	12	41	0.47	- 0.17 - 0.53	0. 17	T.	4	16	11	4	nw.	S. J. Brumfield.
ocahontas	Pocahontas		8	27.8		. 50	14	† 0	8	1 38	1.31	- 0.47	. 0.65	1.1	5	22	2			F. E. Hronek.
Rockwell Cityac City	Calhoun	1,278	. 16		+ 6.9	55	1 4		8 12	35	0.85	-0.31	0.48		1 4		1 9		nw.	C. M. Randall. E. N. Baily.
t. Charles	Madison	1,070	11	32.6	+ 6.3	60	28	2	12	41	0.33	- 1.29	0. 17	0.5	3	21	3	7	nw.	R. D. Minard.
igourney	Keokuk	877 745	16 10			54	5	† 2	12	37 36	0.97	-1.29 -0.44 -0.85	0.50		3	18				J. T. Parker. C. L. Beswick.
tockporttorm Lake	Van Buren Buena Vista	1,440			+ 7.0	61 55	1		8		0.97	+ 0.14	0.52			18		9 7	S. W.	Chauncy Case.
ipton	Cedar	807	13	31.7	+ 6.3	55	5	4	12	30	0.90	$\begin{array}{c c} -0.76 \\ -0.22 \end{array}$	0.47	T.	3	19	8	4	sw.	F. K. Gregg.
oledo	Tama	856 588		30.5	+ 6.8	55 55 57	5			38	0.80	$\begin{vmatrix} -0.22 \\ -0.93 \end{vmatrix}$	0.53	T.	3		3	6	SW.	I. F. Giger. G. W. Schofield.
Vapello	Louisa	769		32. 2	+ 7.6	58	5		12	36	0.80	-0.53	0.80)			13	7		Wm. A. Cook.
Vaterloo	Black Hawk	862	29	27.4	+ 5.4	55	28	1	12	45	0.80	-0.51	0.50	T.	5	21	1 2		nw.	Ralph B. Slippy.
Vaukee	Dallas	1,039		30.0		. 59	28	- 1		37	0.59		. 0.40	0.8	4	23	3	5	sw. nw.	Samuel F. Foft. Earl C. Moore.
Vaverly Vebster City	Bremer		. 7	28.0	+ 6.4		28 28	- 1	12	37	0.55	+ 0.32		T.	4		ii	5		C. D. Carpenter.
West Bend	Palo Alto	1, 197	19	26.8	+ 6.2	54	1	- 2	12	33	1. 35	+ 0.46	0.80	9.0) 3	18	1 6	3 7	S.	Phil Dorweiler.
Whitten	Hardin	1,036		26.5	+ 4.9	49	1	- 2	12	33	1. 13	+ 0.01	0. 62	T.	3	12				Dr. F. P. Butler. Dr. R. S. Cooper.
Vinterset	Madison	1,129	21	31.6	+ 5.6	57	28	2	12	38	0.60	0.73	0.30	0.3	1	10		1	S.	Dr. K. S. Cooper.
Jorin	Scotland	700	26									- 1.62				12			a sw.	J. W. Pulliam.
Hannibal	Marion	534 500		35.5	+ 4.2	63		8	12		0, 46	- 1.19	0.24		3	20		1 7		U. S. Weather Burea J. T. Farrel.
∠ouisiana		797	35	33.0	+ 4.8	63				† 43	0.98	3 - 0.94 3 - 1.44	0.68				1 5	2 6		J. F. Llewellyn.
Palmyra	Marion.	617	1	34.7		. 63	1	1 6	12	41	0.51		. 0.51	T.	1 3	1	13	3 3	SW.	W. B. Markell.
teffenvilleublett	Lewis	576	20	36. 6	+ 6.7	63	4	6	11	37	0,60	- 1.20	0.30) T.	1 3	19	1 7	7 8	5 S.	Frank Hall.
		1,000	33	90 4	+ 4.2	61		3		34		- 1.70) () () (11	14		nw.	Lewis Spriggs.

Table 1.—Climatological data for December, 1912. District No. 5—Continued.

			years	Tem	peratur	e, in e	degre	es Fal	renh	neit.	Prec	cipitation	ı, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest,	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	per of rainy inch or mo	Number of clear	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	Prevailing wind d	Observers,
Indiana.													*							
ollegeville	Jasper		13		+ 5.4	58	5	1	12	37	0.24	- 2.14	0.24	T.	1	12		10	sw.	Otto Miller.
nox		716 810	16	33.6	+ 6.1	58 56	5†	3	12 12	32 36 28 33	0.90 1.10	1 29	0.35 0.43	0.5	5	13 15	8 6	10	SW.	W. R. R. Tatman. Wm. M. Walton, jr.
aporte	Laporte	790	9			56	5† 5† 5†	3	12	28	0.93	- 1.38	0.43	T.	8	11	9	11	SW.	J. W. Siders.
lymouth	St. Joseph	726	19	32.6	+ 5.4	58	51	2 5	12	33	0.90	- 2.08	0.36	0.5	8 7	6	12	13	sw.	Henry H. Swaim.
Illinois.																				
	M	700	12	22.0		*0	P.4	0	10	36	0.74	0.27	0.00	0.0		18	8		3.	William D. Barre
ldolexander	Mercer Morgan	738 670	19	35. 1	$+5.9 \\ +4.3$	58 61	5†	3	12	38	0.74 0.53	- 0.57 - 1.33	0.29	0.8	5	14	10	5 7	w.	William B. Frew. George H. Hall.
ntioch	Lake	861	11	30.4	+ 4.5	52	5†	Ö	12 12 12	38 28 31	1.31	- 0.24	0.40	1.0	5	9	3	19	w.	J. C. James.
storia	Fulton	650	13	33.8	+ 4.6	52 62	5	6	12	31	0.97	- 0.85	0.50	T.	4	17	8	6	nw.	Edward V. Bohl.
urora		678 448	33					*****												. W. Holden. . Mrs. L. M. Rice.
eardstownement		700	5	35.0		58	1†	4	12	36	0.88		0.60	T.	2	20	6	5	sw.	N. N. Stevenson.
loomington	McLean	840	21	34.0	+ 4.9	57 64	1	4	12	31	0.85	- 1.33	0.39	T.	7	13	7	11	sw.	Prof. H. N. Pearce.
airo	Alexander	359	40	39.4	+ 0.9		5	17	9	27	1.54	- 1.79 - 1.43	0.58	3.2	7	15 18	5	11	S.	U. S. Weather Bureau.
rbondale	Jackson	412 663	22	36.8	+ 3.9	64	5	12	9† 12	35 38	$0.75 \\ 0.32$	- 1.43	0.23	0.5 T.	7 2	18	8	5	nw.	State Normal Universit Blackburn College,
rlyle	Cliptor	470	27	30.2		30			12		0. 60	- 1.97 - 1.68	0.27	T.	3	10				Hervey O. Jones.
ester	Randolph	380	20								0.74	- 1.80	0.26	T.	6					Hervey O. Jones. Charles S. Gollon.
inton	De Witt	727	2 20	34.2	+ 4.7	59	1	4	12	35 29	1.00	0.76	0.51	T. T.	6	19 18	7 3	5 10	SW.	J. Frank Ziegler.
atsburgbden	Adams Union	763 656	29	38.0	+ 4.7	62	5 2 1	5 11	12	35	0.97	-0.76 -2.72	0.37	1.0	5	18	0	12	S. S.	Dr. J. R. Lambert, John Buck.
kota	Stephenson	929	7	29.2		53	2	- 2	12	34	1.31		0.70	1.5	5	8	12	11	SW.	Elmer G. Smith.
catur	Macon	€85	21	34.8	+ 4.4 + 4.5	61		5 2	12	36	0.97	- 1.17	0.39	T.	6	20		5	SW.	Prof. J. H. Coonradt.
xon	Lee	725	22 19	30.0	+ 4.5	58	1	12	12†	43		- 0.30	0.65	T.	5	15 19	9	14	*****	H. U. Barwell.
Quoin	Perry Livingston	459 600	19		+ 2.8 + 4.5	64 57	5	2	9†	33 32	0.44	- 2.13 - 0.87	0.20	T. T.	6	12	5	3 14	nw.	G. H. Knetzger. Edward O. Welch.
vightst St. Louis	St. Clair	481	1								0.64		0.31	T.	5					W. McK. Brown.
wardsville	Madison	554	13								0.64	- 1.35	0.30	0.2	5 4					. W. H. Morgan.
zin	Kane	716	5	31.2		54	2†	1	12	32	0.87	******	0.48	T. T.	5	10	10	11	SW.	Elgin Observatory. Ewing College.
ringirview		449 733	i								0.03	*****	0.38	T.	5					Abram Wilson.
lva	Henry	842	20	32.0	+ 6.0	56	5†	2	12	34	0.78	- 0.75	0.30	0.2	4	16	6	9	sw.	Prof. F. U. White.
afton	Jersey	422	19								0.42	- 1.96 - 2.16	0.20	0.5	5				******	R. C. Goodrich.
eenville	Bond Pike	635 650	34 27	36.8	+ 4.1 + 4.7 + 2.9	62	1	10	12 12	35 39	$0.52 \\ 0.72$	- 2. 16 - 0. 90	0.20	T. T.	4	21 22	5	8	W. SW.	H. W. Reidemann. George F. Kneeland.
riggsvilleavana	Mason	475	20	34.0	+ 2.9	61	5 5	7 6 3 8 2 0	12	35	0.81	- 1.17	0.56	T.	5	18	7	6	nw.	L. L. Eutenener.
enry	Marshall	500	24	33.7	+ 4.8	58	1†	3	12	31	1.19	- 0.64	0.56	0	6	17	7	7	sw.	Dr. F. A. Powell. Ira L. Lockwood.
llsboro	Montgomery	675	18	37.2	+ 5.2	63	1	8	12	36	0.50	- 1.85 - 1.04	0.26	T.	7	22	1	8	3.	Ira L. Lockwood.
lietshwaukee	Will Winnebago	609 730	21 24	31.6	+ 4.2 + 4.7	56 55	1†	2	12 12	32 34	1.01 1.45	- 1.04 - 0.43	0.48 0.52	0.5 1.5	6	14 11	10	13 10	SW.	F. M. Muhlig. George Stevens.
Grange	Cook	657	20	32.0	+5.3	55	1+	6	12	31	1.02	- 0.73	0.46	T.	6	14	8	9	SW.	Prof E E Sanford
Harpe	Hancock	698	33	33.6	+ 5.4	62	5	6	12	36	0.57	- 0.73 - 1.69	0.35	T.	2	19	9	3	nw.	George E. Campbell. M. N. Wertz. U. S. Weather Bureau.
nark		883	23	30.4	+ 5.3	55 57	5	- 1	12 12	34	1.58 0.98	- 0.04 - 1.30	1. 18 0. 48	2.0 T.	4	19 10	5 9	7 12	S. W.	M. N. Wertz.
Salle	La Salle Logan	536 575	24	34.4	+ 4.9 + 3.3	60	1	3	12	35	0.63	- 1.39	0.37	T.	8 4 4	-19	6	6	S.	Prof. C. S. Oglevee.
ami	Sangamon	624	12								0.45	- 1.18	0.32	T.	4	17	13	11	nw.	H. C. Foster.
comb	McDonough	700	8								0.76		0. 26	T.	5					State Normal University
inteno	Kankakee	711 633	1 25	33 6	+ 5.1	60	1	2	12	33	1. 15 0. 56	- 1.82	0.37	T. T.	6 4	15 13	7 5	13	SW.	J. F. Schmeltzer. Joseph H. Peltier.
scoutah	St. Clair	425	22	38.4	+ 3.8	62	5	12	91	39	0.35	- 2.06	0.17	T.	4	17	8	6	50.	George Henrich.
nonk	Woodford	745	19																	B. R. Morris.
nmouth	Warren	784 518	20	00 4	+ 6.1	62 56	5	3	12 12	36 31	0.77 1.05	- 0.78	0.27	T. T.	5 7	20 13	5	13	W. SW.	Prof. J. C. Hutchinson. E. G. Cryder.
rrison	. Whiteside	685	18	31.6	+ 6.4	54	2†	3 2 1	12	35	1.03	- 0.42	0.41	0.5	7 5	19	5 7 5	7	SW.	S. A. Maxwell.
rrisonville	. Christian	638	13	35.0	+ 4.3	61	1	5	12	36	0.51	- 0.42 - 1.44	0.25	T.	3	16	10	5	sw.	J. D. Lowis.
unt Vernon	Jefferson	511	18	34.0b	+ 0.9	64	5	114	9†	37d	0.69	- 1.90 - 1.77	0.33 0.25	T.	3	16	2	13	SW.	Theodore P. Stelle. H. M. Potter.
shville gon	Ogle	503 702	12	31.0		57	14	- 1	12	33	1.41		0. 40	0.7	6	12	7	12	S.	Samuel Ray.
awa	La Salle	500	26	32. 1d	+ 3.2	49h	15†	4 8	12	29h	1.18	- 0.79 - 1.60	0.45	T.	5 4	15	7 3 5	13	sw.	Miss Manda M Hannis
na	. Christian	692	26	35. 2	+ 3.2	59	5†	8	12	40	0.99	- 1.60	0.60	T.	4	20	5	6		Dr. G. N. Gilbert. A. C. McBride.
w Paworia	LeePeoria	930 609	56	32.7	+ 4.6	58	5	s	12	33	1. 29	- 1.24	0.52	0.5 T.	6	13	9	9	S.	: U. S. Weather Dureau.
ntiac	Livingston	546	10	33.€	+ 4.4	57	5	5 3 8	12	31	0.69	- 1.24 - 1.41	0.34	T. T.	6	10	7	14	W.	George Butterworth.
incy	. Adams	481	6	34.0		62	5 2	8	12†	39	0.60		0.35	T.	3					Fred J. Brinkoetter.
ev	McHenry	956	53	29.7a	+ 6.3	53ª	2	- 1a	12	32ª	1.08 0.76	- 0.71	0.45	2.0 T.	8 5	10	8 7 7	13	SW.	John West James. R. E. Bradbury.
bertsekford	Winnebago	774 763	20	30.5	+ 2.8	55*	1	- 1	12	33a	1. 14	- 0.77	0.33	0.4	5		7	8	sw.	Dr. John R. Porter.
shville	Schuvler	670	21	34.44	$^{+\ 2.8}_{+\ 3.1}$	62a	5	7a	12 12	36a	0.91	- 0.83	0.45	T.	4	16 11	14 7	6		H. F. Dyson.
Charles	Kane	700	17	31.5	+ 5.5	53a	1†	0	12	31a	1.11	- 0.77 - 0.83 - 0.86 - 1.55 - 1.78 - 2.12 - 0.97 - 1.29	0.50	T.	6	13		11	SW.	Dr. William H. Bishop.
Peter	Fayette	500 538	10	35.5	+ 2.0 + 3.4	61 62 i	1† 5†	8 11 j	12 12	37 38 i	0.67 0.61	- 1.55	0.27	T.	5	18 17	6	8	nw.	M. L. Lansford. James A. Caldwell.
ringfield	Randolph	538 644	26 32	34.6	+ 3.3	60	1	8	12	31	0. 31	- 2.12	0. 25	T.	5	14	9	8	S.	U. S. Weather Bureau.
eator	La Salle	626	10	31.8	+ 3.3 + 4.3	56	1+	8	12 12 12	42	0.78	- 0.97	0.41	0.1	5 5	15 12	6	10	SW.	Miss Lora Sweetser.
llivan	Moultrie	530	12	34.0a	+ 3.7	€2a	1	54	12	37ª	0.77	- 1.29	0.40	T.	4	12	12	7	sw.	C. A. Corbin.
camore	De Kalb	855 798	12 32 28 21	31.4	+ 5.9	60	6	- 1	12	40			0.45	T. T. T. T. T. T. T. T. T.	3	17	2	12	SW.	George E. Valentine. F. I. Smucker.
lnut	Bureau	717	21	32.2	+ 5.1	55	5	2	12	34	1. 26	- 1.15 - 0.32 - 1.17	0. 45	T.	4	15	4	12	w.	O. C. Nussle.
arsaw	Hancock	501	14								0.41	- 1.17	0.21	T.	2					. W. R. Kirkbride.
terloo	Monroe	719	1	99.0					****	40	0.48		0.24	T.	4	00			700	Prof. James E. Raibour
nite Hallindsor	Greene	573 681	12	36.2	1 2 6	64	5	6	12 12	40 37 35 32	0.55	- 0.78 - 1.60 - 0.25 - 0.22	0.36	T.	5	22 16	6	5	ne.	Frank Dillman. Herbert Rose.
nnebago.	Winnehago	900	13 25	30.2	+3.6 + 4.9 + 5.0	62 54	2+	- 1	12	35	1.60	- 0.25	0.38	3.0	5	18	1	12	SW.	Frank Osborn.
rkville	Kendall	584	25 25	31.4	+ 5.0	55	2† 1†	i	12	32	1.53	- 0.22	0.65	T.	7	11	8	12	W.	Herman A. Grimwood.

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 5, Upper Mississippi Valley.

Stations.	Watershed.]	Day	of mo	onth.														
Stations.	watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
North Dakota.																																
menia	Red					T.			T.		T.					T.		. 25	.08	. 05	. 05				T.	.37						
ottineau	Mouse				.34		. 19				.04	.28					. 20	. 17	.08												. 16	. 06
owbells	Sheyenne	****		.04						****	.01	****	****	****			.02		****	.04	****			***								****
rosby	Mouse				. 13												.09	.03		. 05	.04				****	T.						
evils Lake	Sheyenne			.03		T.	T.	. 05			. 04				.20	.04	. 14	. 04		. 20	T.										T.	
onnybrook	Mouse				T.			. 05							Т.	15	07	07	. 10	. 25											T	T.
unseithdmore	Shevenne		****			****		. 10										.01	.02										****			
essenden	Wells			T.			.02				T.							. 13			T.					. 04					T.	T.
orman	Sheyenne	****				. 02																									· · · ·	
raftonranville	Red				****	.03												. 10	. 02										****		T.	. 03
annah	Pembina		****	T.	. 10		****													.30										.30		****
ansboro	Red				.02			. 05													. 13											
illsboro	do						T.	T.			T.					. 08		. 20							. 10							
akota	Sheyenne					T.				.01		- * * *				. 25		. 12				.02									.00	****
angdon	Pembina		***		01				.02							32	****	.08	.01	01	. 18	.01									.01	.01
isbon	Sheyenne							T.							T.			.30	T							. 05						T.
cKinney	Mouse				. 20		. 05	T.			T.				T.					. 15												
cLeod	Sheyenne			di.			10								96		10	. 05								05	****				783	****
anfredayville	Red			T.						. 10					38 T.	.30	. 10	T	.04	. 05	.04						****			****	1.	
ilnor	ned					T.		T.			. 02							. 25		T.					T.							
mot	Mouse			T.	. 03			.02			T.					. 02	. 02	.08	T.	.01	. 05					.01						
into	Red			. 03				. 20							T.		.01		. 15												·	
riska	Sheyenne			T.	T.		T.	T.		T.	T.	T.	***	***	Т.	.10	· m	. 15	. 15	T.	T.			****	*	. 35		****			T.	****
ark Riverembina	do			1.														. 13		. 10	. 20	. 10									. 12	****
ower	Sheyenne				. 10						. 10					T.	.30			. 10					. 20						T.	
owner	Mouse				. 05		. 05								T.	T.		. 10		. 05												T.
niversity	Red					T.		.04							. T.	.01	. 02	. 25	T.	. 05	. 02				T.						T.	
Vahpeton	Pembina	***		00	.05	T.		30		m							. 10	· m		. 40					****							T.
esthope	Mouse			.00	.02		. 10	. 10		4.	. 05							.05	. 10			****									1111	A .
Tillow City	do		. 10	. 10			. 10	T.			. 10					T.	. 10		. 10	.30												
10																																
Minnesota.										1				1																		
lbert Lea	Mississippi	. 60	. 20			.20						. 05							. 15	.30												
lexandria []	do		T.			****	. 20	T.										. 10	T.		T.											T.
ngus	Red			. 02												T.	.05			. 10					T.						T.	T.
agley	do	T.		700	. 05	. 04	70				70	***	****		12		. 05	. 15	. 12						. 30						. 10	. 03
audetteeardsley	Rainy Minnesota			1.		20	A.	.04			T.						T.		T.						T	.00	. 02		****		T.	
emidji	Mississippi		.01							.02							.08	. 17		. 03		. 05										
ird Island	Minnesota					. 16		T.			T.					. 04	T.	. 11	T.													
rainerd	Mississippi		1 05			.07		. 08	· · · ·			m.					T.	. 43				T.				T.		T.				
aledonia ampbell	Red		1.05		1	Т.	.53		T.	T.	10		****				T.	. 15		1		.02				T.	T.	1.				.05
ass Lake []	Mississippi				00			1.			. 10			T		1.		. 16		.08		1				.23				1000	1	.04
ollegeville	do	. 03	3		1													.27														
rookston	Red	T.	T,		. 10			. 10				T.				. 30		.30	10									T.				T.
etroit	do	00	T.	T.		T.	T.				70				10	T.	. 08	T.	. 15	T.	. 05	T.	T.	TD.		. 40	T.	T.			1	T.
airmont (near)	Rainy Minnesota	.06	3	.01		T.	Т.								10			. 27		T.	. 08						1.	***			T.	
aribault	Mississippi		1								****							. 10	1.	1.							1000					
armington	do	. 44	T.			.30	. 05	. 05								T.	. 07	.30	. 05	.04		3						T.				
ergus Falls	Red					. 20		. 08								. 01		. 16	. 04	. 15	. 08				. 10	.00	3	. 0.			. 14	
ort Ripley	Mississippi		.11				.01		. 18								T.		. 04		. 09	T.			00						. 03	
osstonlencoe						30		. 09			****	.01				.00		. 50		T.	. 00										. 00	
rand Meadow	do	. 48	. 18		****	. 46	.07	T.	T.	****		T.	****				T.	.23	07	T.												
ull Lake Dam	do	. 13	3			T.	. 03	. 11								. 05		. 26	T.	T.	. 09					.1	1					
fallock	Red			T.				. 10										.30													. 10	
lalstead	St Croiv	10				90					****					. 22		. 10			.00	10				.2	7				T.	
nternational Falls.	St. Croix Rainy	* 10)	1		.05	.00	.00									****	.05	.00	T.		1.00				2					0 .10)
tasca State Park	Mississippi					. 20		. 10									. 10					. 04				1.20) (1
ake Crystal	Minnesota																															
eech Lake Dam	Mississippi			11	l	.03	T.	. 06	3							. 02	T.	. 29	. 02	. 04	. 08	3		.01		.35	3					.0
ong Projrio	Rainy					.34												.30	. 17				****		. 16							
ong Prairieynd	Mississippi	03	3		1	07			1		T	1					****	92														
ankato II	do		. 42	2			25			1		1.06	2					31	I OS	2	03	3										
lapleplain	Mississippi	. 50)			. 25	. 03	T.			T.	L.			. T.	. 15	.00	. 62	T.	.07	. 11	1 T.						. T.			T.	
ilaca	do																															
lilan	Minnesota Mississippi	50			Tr.			.05			T. I.			* ***		. 10	25	1.15	T	000	00						m		***)
linneapolis Iontevideo	Minnesota	. 00		****	Т.	. 30	. 15	T			I.	06	3	* * * *	00	01	T	19	T.	.09	0.00	1	1::-				1.					0.
loorhead	Red			T.		.06	T.	T.	1		T.					T.	. 22	. 08	.03	. 06	.0	2 T.			. 49						0	
ora	St. Croix	, 14	1 .01	1		. 20	. 05	. 15									T.	. 45		. 10	. 03	3 T.									T.	
orris	Minnesota					.07					. 0				. T.			. 20			.0	5			. 01		-1				. 0	1
ew London	Mississippi	. 00				.30	T.									. T.	T.	1			1											
ew Richland	Minnesota	1 42	2			.32					. T.						. T.	.36	000	. 06	T.											
ew Ulmsakis	Mississippi	00	. 4			.00	. 20	03								T.	T.	1.20	T.	T 01	0.00	5 7				1 0	1	T		1		
ark Rapids	do								. 13	3								16	.00	.01	.16	0	.09			1 3	0	0	1		1.	
ierz	do	T.																. 04		T.	. 13	3	T.									
ine River Dam	do	. 10)			. 10		. 05										. 15								0	6					
okegama Falls	do	. 15	5	. 09		. 03		03								. T.	T.	. 21		. 06	. 04	1 T.				1	7				. T.	T T
ed Lake	Red		****	.00		****	T.	T.	(m)	****		m	· · · ·			T.		. 35	T.	. 20	T.	T.			Т.	T.	T.	m		. T.	1.1	
ed Wing edwood Falls	Mississippi Minnesota		. 44	2		.04	. 34	Tr.	T.	****	1	T.	T.	***		. 04	* ***	. 20)			3									0 0 0 0
eeds Landing #1	Mississinni		73	3			43									29)	19	0:		0.											
ochester [1]	do.		50)		****	36		****							. 60	***	22	.00		.00	.0.										
oseau II	Red	T.			T.		.00	T.		T.								T.	T.		.30	T.										0 T
ochester []oseau []	Mississippi	. 55	. 42	2		.06			T.									. 23	T.		.00	6		T.								
Cloud	do	, 20				. 03	. 21	. 04									. 04	.17	. 02	.06	.0	5					T					
		1 . 47				. 21			1 787	1	1	1	4	1	Of	er 11				. 05	01	N.I	4									

Table 2.—Daily precipitation for December, 1912. District No. 5—Continued.

Stations.	Watershed.															ay o	f mor	intern.	-									_				_	-
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Tofal
dinnesota—Contd.																																	
ndy Lake Dam	Mississippi	26		T		05		69								. 03		. 51			. 05	T.				13							1
ate Sanatorium	do		. 03			.10		.10								. 05		. 35	T.		.32	T.				. 25					.02	T.	î
illwater	St. Croix					.25	. 20	.15								. 05	.30	40	. 21	.18	T.	.10			****	****	****	****	****				1
hief River Falls	Red																																
arren	Minnesota Red						10				T		****					20			.10						T	****				· T	
arroad	Rainy					T.	T.	. 05										15		20							. 05				. 20		
innebago	Minnesota Mississippi							15		****						04	.30	:52	Т.	T.	Т.	.03				58		T.			.02		1
inona	do	.47	. 20			. 24	. 05	T.				T.				. 09	T.	. 29	. 03		. 08			T.				T.					1
Vorthington	Des Moines Mississippi	.50				25	. 07	T.				T.					T.	. 09		T.	T. T.							T.					0
South Dakota.																										-							
ilbank	Minnesota					T.	. 07											. 22	.07	. 07		.02											. 0
sseton	do					T.		.04				. 02						.02	••••	T.								****		****	****	T.	0
Wisconsin.			-																														
ntigo	Wisconsin	.34	200			. 22			. 05		T.					T.		.60	.20		.30												. 2
eloit	Chippewa Rock		1.08		*	.08	. 10	. 10												. 75	T.	T.								****			1
ig St Germain Dam	Wisconsin	. 13	. 38			.11	. 45		. 09							T.		.16	.05	T.			T.	T.			T.	T.				T.	1
rodhead	Rockdo	*	1.08			T.	T.	T.	****			1		****			****	.32	T.	T.	T.					****	T.				T.	****	1
ornell	Chippewa	. 46	. 24			. 15	.11		.01							. 10		.31	T.	T. T.	T.												. 1
ottage Grove	Rockdo	. 30	1.15			.11			.02			T.					T.	. 43	. 01		. 10						. 01				1.	****	2
Deerskin Dam	Wisconsin	. 30	. 58	3		.08	. 41	.0€	.04							T.		. 08			. 02	T.								****		T.	1
Oelavan	Rockdo		1.59			. 13						T.					****	. 33	T.	. 04	****				****		T.	***		T.	****	****	. 2
owning	Chippewa	. 20					.10	T.								T.		1.20	T.														. 1
lau Claire	do		. 13 T.				.37	. 03	T.			T.				T.		. 42	Т.		. 22	T.											. 2
rand Rapids	Wisconsin		. 92	2		. 10	. 44	T.								. 19	.07	. 32			. 27 T.	. 02											. 2
rantsburg	St. Croix Wisconsin	30			3	. 40	.25						T.			T.	T.	.60	T.		T.		****										. 1
ancock	Black)		. 30										.13	1.	.07	1.		. 22												
ayward	St. Croix	. 50						T.								. 10	.02	. 30	. 02	. 10	. 40 T.												. 1
lillsboro	Wisconsin	1.00	.10)		. 60	.20	.30)			1.				. 16	Т.		.20	.10													- 1
ac du Flambeau	Chippewa																****																
a Crosseake Mills	Mississippi Rock							T.	T.			Т.					.05		T.	. 03 T.	. 09			. 02			. 0	T.			T.		- 3
ancaster	Mississippi	1 . 72				50																									***		. 1
ong Lake	Wisconsin Rock	33	. 60	T.	T.	. 10			T.		T.	т.				.01	.12	.18	.07 T.	06	. 12		.01				T	T			T	. 03	3 2
farshfield	Wisconsin															.23	T.	.46	T.	T.	.10	T.											
father	do						. 52 T.		. 04								.06		. 03	Т.	. 0	.05		.05				T.			****	****	1
feadow Valley	do	53	. 40	0		09												.22			T.												. j
fedford	Black Wisconsin		1.4	5		30	. 10	.10	0									. 40			.20												- 3
ferrill	do		.1	5		17	.48	.1.	.07		.00	T.				T.		.20	.05	T.	.10	.00	T.	****								T.	
fondovi	Mississippi	. 47	.3	4		20	.30)	. T.			.,					.01				. 08												-]
fount Horeb	Rock Wiseonsin	. 30			-							1.			-	.00				1	.10	T.											1
Veillsville	Black	. 48	. 7	5				5								. 2	. 20	T.			T.												. 3
New Richmond	St. Croix	T.				. 10	. 03	.2: T		***	dece.					T.				. 20													- 1
ark Falls	Chippewa	. 21	.38	8		28	. 28	3 .0	9 T.		T.					T.			. 02	T.	. 13	. 02	T.									T.	. 1
ortage	Wisconsin	77.0	. 7			- 07	9.4	T.	1	1	1				1	l no	V 683	000		T	16	T.		***								****	-
rairie du Chien	Mississippi		. 78	8			1.12	2								T.		.16	T.	T.	. 04												
Prairie du Sac	Wisconsin	4	.8	4		. 16	16		06							. 08	T.	.34	16	. 07	. 12	03	T.			***	* ***	T.	***			The state of	
Rhinelander	Mississippi. Wisconsin. Chippewa. Wisconsin. Mississippi.	.47	. 5	9		. 16	.51	0.0	7 .04		T.							.05				0.00	1	1	1			1	1		1	de	1 6
hullsburg	Mississippi St. Croix	. 30	.8	0		T.			Т.							70	70	. 25	T.	10	. 0	30		T.									-
olon Springs	St. Croix	40				20	.18	1 1	7		1					1.	T.	. 68	1.	. 10	.09	T.	1		1	***		1				****	
tanley	Chippewa Wisconsin	. 2					. 20) T.					T.																				
tevens Point	Wisconsin	1.00	1 .6	0		5.5	. 50	T.	5 0								T.	- 70			. 31			. 16									
omahawk	do																	***															
rout Lake		8	77	5		00	. 42	2 . 0	0 0	Т.	T.							. 25	. 10	T.	. 1	. 08	T.	T			Т.	T			Т.	T.	
alley Junction	do	90				. 35	. 4	5 T.				Т.				. 2	2	.16	T.		. 10)											
/iroqua	Mississippi Wisconsin	. 5	5 .4	5		30	. 2	5 T.	. 0	10	0	. 02				. 0	. 02	. 34	T.	T	.00	0 00	T	T.				T.	***			T	-
Vatertown	Rook		9	7		08	.0	5					1				. 14	.35	T.		.1.	5					. T.			T.	***		
Vaukesha	Fox	. *	1.4	2		15									- T.		58			.10	1.										- 01		
Vausau Veyerhauser	Fox. Wisconsin. Chippewa.	*	0 .0	0		30	0 .00	8 .0	8	0			1			.0	7 T.	.80		01	.0	8						T					
Vhitehall	Chippewa Mississippi.	. 1.0	0			20	T.	T.								. 10	0	. 20			. 20	0											1
Iowa.									1						1															-			
lbia	Des Moines		8	0														T.		T.													
Algona	Raccoon	. 6	8	4	. T.	. 30	T.										18	0.05	. 0	1	T.								* * * *				
llta! lmana	Raccoon	. 6	4 .3	0		. 00	3		T.									T.			T.												
mes	Skunk	4	8 .0	7	0	2 .3	5			. T.							. T.	. 02			***												-
BaxterBelle Plaine	Iowa	3	2 .0	5	0	2 .15	3		T.		* * * *							. 00	T.	00	T			****									-
Belmond	do	5	0 .1	0		18	3										04	1 .08	3 .00	3 .0	0. 0	1		. 00	3		. T.						
Bloomfield	Micciccinni	1 30	(1)	GE 1	12 13	2 (3)	11	-					1						1						- I was in					. levi			- 1
BonaparteBoone	dodo	1 .4	. 2	4			T.												T.		T.												
witt	Town	5	7 T	1		. 3	T.	T		1							1.11	0	7 0	1 .04	L	1	1	1	1	1		The state of	1	1	1	1	.1

Table 2.—Daily precipitation for December, 1912. District No. 5—Continued.

Stations.	Watershed.														3	Day	of mo	onth.															1
Stations.	watersned.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	7 28	29	30	31	
lowa-Continued.									-																								1
urlington	Mississippi.	. 3	3		35 T													. 03											1				1
arroll	Raccoon		5	3	. T													. 05				****											
edar Rapids harles City	Cedar	. 6	8			2 .1	8		T								. 06	T.	.01	.03	T.			.01				-	T.				
lear Lake	do	. 4	0			3	30										. 05																
inton dumbus Junction.	Mississippi. Iowa	3	2 .5	7 T	T	0			T									.32			egs.					1		. T.					-
avenport	Mississippi.	3	1 .0	4 .(02 .0	4 .0	11		. T								.14 T.	T.	т.	T.	T.					****	1	T.		T.	****	1200	1
ecorah	do	. 6	7			4	3					. T.	***			. 03	T.	. 07	T	.08	****												
elaware	Des Moines	2	2	9		1 .0			171								T.	T.	T.		T.						T.	Т.					-
ibuque	Mississippi.	. 6	1 .2	1		0	5 T		. T							T.	.09	.01	T. .01	.02	T.												
rlhamkader	Raccoon Mississippi.	. 54	5 .0	0		1											T.	.12			.08					****							-
ma	Wapsipini-	. 60	0 .1	0		3	0 T				T.	T.						T.	. 20		.30												
therville	con. Des Moines	m	. 6	0		. T		0				1					. 45														1	1	
irfield	Skunk	. 40	0 . 0	3		0	1					1		****	****				****	****	****				****	****							-
vette	Mississippi.	. 78	8 T.			3	1 T				T.							.08			. 04									T.			
rest City rt Dodge	Cedar Des Moines	. 58	. 4	5		1	5 9	3									. 15	15	· ir	. 20	· m					****							-
rt Madison	Mississippi	. 30)	2	5									****	T.		.15 T.	. 10					****			****	****						
and Meadow	Iowa Mississippi	50	.2	0				i	- 35		100					01	****	***	****					****				.03					
innell	Iowa				T	. 0.	5							1				. 0.5	.02		T.	****	****	****	****	****	****	.0.					-
undy Center	Cedar	1 . 57	. 7	5			2				***			****	****			****	Т. Т.		T.		****										
thrie Center	Raccoon		.04	8		2 .2	8					T.	****		****	****	02	T.	T.							****		***		****			1
mboldt	Des Moines .					8	0									.05	.03 T.	. 10	.00		. 05	***											
lependence	Wapsipinicon Des Moines .	. 46	. 10	0	. T.	100	8								****			T.	T.		Т.												-
a City []	Iowa		. 75	5	. 1.	.0.					****		****	****	***		T.	T.	T.	****											****		
a Falls []	do	T.	. 43			0	4 .2	3					****					.05	T.		.05							T.					
erson	Raccoon Mississippi	. 24	. 194	.2	. T.	T.			TS		****	T.	****				.06 T.	. 03	T.								70						
saugua	Des Moines .		. 32	2	0	T.			1.			1.						T	1.			***									****		
xville	do		. 15	3	1/																												
oniasing	do Mississippi		T.		0.	10	4	4	T.	****	****		****		****	01		.05	Т.		.09	04				****		****					
Claire []	do		.71		00	5 . 19	9			T.								.31	T.		T.	T.						T.	T.		.01		
shalltown	Cedar											****		****	****		****	10		02						****			-				
roe	Skunk								T.	****			****				T.	. 04	T.	T.	T						T.		****	****	****	****	
int Pleasant	do	. 46	. 12	. 10	6 T.				T.								T.	.30 .															
catine [[Mississippi Wapsipinicon	. 65	.91	.0	5 .09	45					****							.05 .				***			****			T.		****			
a Springs	Cedar	. 65	. 03			. 38	3		T.	****							.17	.02	T.	.03	T						T.	T.					
thwood	Wapsipinicon	. 50	. 05			. 20	.20	9					****	****	****		T.	. 40	. 10	. 20	. 10 .	m.						T.					1
70	Cedar	. 1967	10.			38	3																						****	****	****		1
aloosa	Des Moines	. 53	. 13							****							.03					***											
Imwa	do	40	25	T.	****	01	T	77	T.				****	****			T	T	T.		q.	T			T.		T	· Tr			****	****	-
aloosa imwa a	Raccoon	. 13	. 14			. 17							****				****	.03	T.	T													
hontas	Des Moines Raccoon	. UU																															1
City	do	. 13	****		. 48	. 18		****				****			****		T. T.	.06 .	***	T	***	***									****	****	-
Charles	Des Moines	. 17	. 15		Т.	.01											T.	T.	T. .								T.						1
kport	Skunkdo	.50	. 45	.07	. 02	T.	****					****					· di				:												1
m Lake	Raccoon	. 43				. 52					T.						.02	T.	T									T.					1
on	Cedar	. 47	.31			****				T.							T. .02	. 12 .	in.	T.	T							T.					-
do	Iowado	. 15	. 21	. 02		. 50	T.		****	****	****	****	****	****		****		. 02	1.	T. -	***										****		-
	Skunk Cedar																																1
erloo	Raccoon	.05	. 50	****	T	.01	.20		T.						****		00	T.	T	* * *	.04 .												
erly	Cedar					11 50															1						1						
ster City	Des Moines	.33	. 10		T.	.11											200	.01 .	***	Т					***								1
Bend	Des Moines do Iowa	. 62	.11	****	****	. 25		****	****			****					. 30	T.	Ť.	T.	T.	* * * *		***	***		***	••••					
erset	Des Moines	. 30	. 13		. 10	. 13	T.											T.	T.														1
Missouri.																																	
	NF11																																-
ibal	Mississippi	. 36		.04	01		****		****								24	r.	Ti-	***	***				***	***	T			T			1
siana	do	. 12		. 18	.01		****		1.							***	. 24	. 68	T. :		***				***	***		T.					1
siana	do	T.	. 25		. 11	. 14	****					****						. 15 .		T							713	.01			T.		1
yraenville	do	.20	.10	30	.51	T.	****									***	Tr.	T.		***	***					***	Т.						1
Mt	do																																1
lalia	do				. 25																												1
enton	40	A.	. 13		.01	. 03		****	****					****			***	. 30 .		***	***				***	***	***	.01					1
Indiana.	Iroquois								T.		The second second									T											94		
	Kankakee	.06	.35		.02	.03	.04		.02			T.				T.	***	14		L	т.				***		T. T.	T.		.02	.24		(
rte	do	T.	. 43			.22			. 05							T		. 15						T. .			T.	T.	.25	T.			1
rte louth Bend	do	.03	.27	****		. 23	T.	** -	.01	**		T.				T.	T.	. 17	/	T	T				***		T.	.01		.02	. 19		(
Illinois.	uU	. 02	.00	****		.00	. 05		1.	****	***	1.				1.	***	. 10	***	4.	4.	**			***	***	1.	***		.04	. 22		(
	Mississippi	. 13	. 29	. 16		. 06												10 '	т.								Т.						(
ander	Illinois	T.	. 08	T.	. 05	. 05			T.									35	T														(
ander	do	. 20	. 35	T.	****	. 22											m	40	D		14						T	70		70	T.		1
	do	I.	. 21	. 18	****	. 08	****	****	T.					***	***	***	T.	. 50 '.	I's .	***						***	T.	T.		T.			(

Table 2.—Daily precipitation for December, 1912. District No. 5—Continued.

4-44	337-4b3														1	Day (of mo	nth.															
tations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Potol
llinois—Continued.																																	
Bloomington	Illinois	. 12	. 20	. 06	. 06	. 01		т.	T.								T.	. 39															0.
airo	Mississippido	. 26			Т.	. 27	****	Т.			Т.							.01	T. T. T.								.00		****	. 58			1.
Carlinville	Illinois	T.	. 12			T.												. 20	T.														0.
Carlyle	Mississippi	. 25		. 27												****	. 08									****		T.			000		0.
Chester	do	. 05	. 24		.06	04	. 12		T									. 06	T	T.		****					T.	T.		. 02 T.	. 26		0.
Coatsburg	Illinois Mississippi	.30	. 08	.37	.00	.01												. 22															0.
Cobden	do		. 24			. 15												. 05	T.											. 23			0.
Dakota	do	. 22			.04	. 17			****									. 40	T.		. 04							T.		.01			1.
Decatur	Illinois Mississippi			T.	. 04													. 38	T.		T		****		****	****		T.	* - * *	.01			1.
Du Quoin	do	. 20				.04		T.											T.								T.			. 15		T.	0.
Dwight	Illinois	. 03	. 20		. 06	. 05			T.								. 05	. 34									T.	T.					0.
East St. Louis II	Mississippi	. 04		·	783	. 01												. 26	T.									T.	00	T.	. 02		0.
Edwardsville	Illinois	. 04		T.	T.													. 48								****	T.	1.	. 02		. 07		0.
Ewing	Mississippi	T.	. 23		T.	. 05		T.										. 06	T.								T.			. 15	. 16	T.	0.
Fairview	Illinois	. 05		. 15	. 06	no	•		di		1	1		1				. 38	T.								T.	T.			T.		0.
Galva	do	. 18		. 25		T.			T.								T.	. 30									T.	T.		****	T.	****	0.
Grafton	Mississippido	. 04	. 20			. 04											T.	. 20									T.	T.	****	. 08		T.	0.
Griggsville	Illinois		T.			. 16												. 56	T.								T.	T.					. 0.
Havana	do	T.		. 06	. 05	. 02												. 56															0.
Henry	do	. 12	. 22			. 06												. 56												T.	. 04 T.		1.
Hillsboro Joliet	Mississippi.	T.	. 24		T.	T.											. 12			T.	T						08				. 12		1.
Kishwaukee	Illinois Mississippi	. 38									1	T.	1	1						1	. 02										. 04		1.
La Grange	Illinois	05	. 29	. 05		. 10			T.									. 46									T.				. 07		. 1.
La Harpe	do			. 22		T.											T.	T.	T.		· m						T.	m			T.		0.
Lanark La Salle	Mississippi.	28			. 05	T. H			T.							Т.		. 30		T	T.						T.	T.		. 04			0.
Lincoln			. 14	T.	. 10	. 02	2		T.									. 37													T.		0.
Loami	do	05	. 06	T.	. 02				1									. 32	T.				xxx					T.		. T.			. 0.
Macomb			. 11	. 26	. 04	1			T.									. 23									T.				T.		0.
Manteno	do	04 T.	. 38	3	. 08				T									. 37											-	05	. 10		0.
Mascoutah	Mississippi	. 02	. 24		.00	1.1			1.									17	7	T.				1				1	1				. 0.
Minonk	Illinois																																0.
Monmouth	Mississippi.	27	.00	. 04		. 13	3											. 27							. T.						16		0.
Morrison	Illinois	08			. 10	1.00	3		T.									.40			T										. 00		1.
Morrison Morrisonville	Mississippi. Illinois	15	11	5					4						1	1	1	2	T.		1.						T.	T.		T.			. 0
Mt. Vernon	Mississippi.		. 18	8		482												. 18	3		1										. 33		. 0.
Nashville	do	. T.	. 2	T.				. T.										. 17		Т.					0			. T.					0.
Oregon	do	38		. 15	T.	1.14	7											. 30	5		0.										19	2	
Ottawa Pana			. 6	. 40)	. 0	2		1							1	. 33	3									T.	-		0			. 0.
Paw Paw	Illinois	09	. 4	51 . 08	T.	. 0	8		T.							1		. 59	2 T.								. T.	T.			. 0		. 1.
Peoria	do	24	1	22	2 . 0	6 T.			. T.								50	3 .04	4 T.									T. T.		0	T.	3	. 1.
Pontiac	do	. 0	3 . 1	4	. 0	7 . 0	3			T	-							0	4								T.						
Quincy Riley	Mississippido	13	3	3 02	04	1	0		T		-	T						4	5			i		1			0				.0	7	
Roberts	Illinois	T.	.3	3	. 0	DI . U	Dinne	-1	. T.				1	1	. 1	1	1	. 2	9 T.								T	T.		. T.	. 0	2	. 0.
Rockford	Mississippi.	. 10	. 5	5		. 0	8		. T.							. T.	T.	. 3	8 T.	T.		3					. T.	T.					. 1. 10.
Rushville	Illinois			0 00					- 783									5	O T	T	T						T.		-		0	5	
St. Peter		00	. 3	2 T.	.0	ים ו	8		. 1.			- T.						2												2	7 T.		. 0.
Sparta	do	1 10	0 .2	5		. 0	3	. T.										.1.15	2 T.						1					1	1	T.	. 0.
Springfield	. Illinois	1.	1	0	0. 1	1 T.			. T.								1	5 . 0	2 T.									. T		. T.			. 0.
Streator	do	0		2	1	3 T.				. T								. 4	1	: T.							T		T	7	0	5	. 0.
Sullivan	. Mississippi.	0	.4	0														2	5 T.								. 1.						
Sycamore Tiskilwa		0	5 2	5													* ***	. 4									T	T					. 0.
Walnut	. Mississippi.	3	3 .3	4 .1	2				T									. 4									T						. 1.
Warsaw	do	2	0	2	1																												. 0.
Waterloo	do		1 .2	3	T.													1	8 T.						-		1	T		0	6		. 0.
White Hall Windsor		. 0	2 1	. 1	1 .0	9 . 0	2												0 T							-	T	1		. 1	0		. 0.
Winnebago		. 4	0 .7	0		1 1	1	T	T							T		3	5		0	4											- 4
Yorkville	. Illinois	1.1	0 .1	0 .3	0 .1	0 .1	8											. 6									T				. 1	0	. 1.

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

¶ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 5, Upper Mississippi Valley.

					North	Dakoti	à.												Minne	sota.								
Date.	Bot		De La	vils ke.	Lisb	on.§§	Min	ot.§§	Pemb	ina.§§	Colleg	geville.		oks- 1.§§	Gra Mead		Mor		Moor	head.	Ne Ulm		Pine Da	River m.	St. F	aul.	Win	nibi- hish.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1 2 3 4 5	21 20 25 24 8	19 - 4 4 16 - 5	31 17 27 30 9	2 1 13 9 - 4	30 24 24 24 31 24	18 - 8 - 8 - 8	19 33 33 28 20	15 1 15 22 5	10 12 10 - 2 0	- 5 8 - 2 -12	49 37 43 44 44	34 4 20 22 10	32 22 28 35 7	30 2 10 15 7	46 46 37 42 39	39 12 19 30 22	45 38 46 54 15	34 3 21 32 15	35 22 36 40 25	8 1 18 20 - 2	41 26 43 36 32	28 9 9 23 10	40 31 34 40 42	29 4 15 19 19	49 26 42 43 38	26 10 21 26 15	44 35 32 33 40	3 10 11 22 11
6 7 8 9	36 21 25 39 15	- 6 7 -26 -21 10	28 37 30 46 24	- 1 -10 -12 23 - 8	36 42 36 52 25	- 3 -11 - 3 19	40 35 35 48 20	1 19 -12 12 19	- 5 - 2 0 10 12	-10 -18 -15 - 8 - 2	25 40 30 40 39	- 5 - 8 - 8 2 7	28 29 16 42 15	- 4 -13 - 8 10	25 37 36 37 33	1 10 2 4 22	35 44 25 49 30	$ \begin{array}{r} -6 \\ 12 \\ -5 \\ 6 \\ 15 \end{array} $	24 38 12 44 37	- 3 - 3 - 8 12 0	33 43 21 43 21	- 2 - 2 - 1 2 19	38 31 13 40 38	$ \begin{array}{r} -4 \\ 10 \\ -11 \\ -2 \\ 5 \end{array} $	16 40 15 41 38	- 1 15 0 8 5	35 25 15 35 31	-1
11 12 13 14 15	4 21 28 35 28	$ \begin{array}{r} -24 \\ -23 \\ 3 \\ 0 \\ 10 \end{array} $	- 4 25 30 37 32	-14 - 6 10 23 21	20 34 42 45 24	-12 -10 - 3 13 22	10 34 38 41 40	- 9 - 4 9 13 21	18 12 16 20 22	- 5 - 5 - 8 - 5 0	25 19 36 46 45	- 3 - 9 18 28 28	8 17 25 34 39	- 8 - 6 0 10 12	24 16 38 37 37	- 2 - 5 16 32 20	3 31 46 53 35	- 7 - 3 3 26 33	20 32 44 37	- 8 - 9 13 18 20	28 36 52 43	- 3 - 5 - 1 16 26	8 12 26 40 38	- 8 -11 - 6 - 4 20	5 22 35 45 42	- 2 - 4 21 27 31	10 12 24 42 40	11 11
16 17 18 19	26 24 23 21 11	9 16 4 4 3	24 23 23 19 13	19 17 11 9 - 4	40 35 25 33 29	17 20 20 19 8	27 27 33 23 27	22 13 - 5 12 8	30 32 30 24 22	5 8 10 12 8	32 30 29 29 25	24 24 20 20 11	28 25 23 23 12	18 18 20 15 9	35 35 30 28 27	32 27 17 10 7	33 32 23 32 16	22 25 23 11 9	30 27 24 26 14	18 22 16 10 - 2	37 28 28 30 15	24 26 22 13 13	27 28 25 20 13	17 20 18 13 7	33 31 27 29 27	30 24 17 20 11	30 25 20 18 22	12 10 8
21 22 23 24	10 32 23 26 20	- 9 -16 8 5 11	5 32 26 34 24	- 8 - 3 14 18 7	20 25 36 35 34	- 8 0 15 19	25 38 32 39 25	- 4 3 15 15 17	18 15 10 5 6	5 0 - 5 - 8 -10	19 28 31 34 32	- 8 19 16 23	9 32 27 27 27 23	- 3 - 5 0 15 20	26 26 31 36 35	- 4 0 8 9 20	21 28 33 35 32	- 5 20 20 15	12 29 26 33 34	- 2 -10 10 15 7	21 25 31 35 35	- 4 2 6 12	17 20 29 28 32	$ \begin{array}{r} 2 \\ -14 \\ 15 \\ -2 \\ 20 \end{array} $	19 30 30 31 33	3 - 5 20 10 25	25 15 20 28 25	-12 3 20
26 27 28 29 30	12 34 32 28 30 28	0 0 10 5 4 5	15 36 35 28 37 32	4 8 17 15 18 16	28 39 40 53 50	- 3 0 3 15 3 15	35 43 37 39 39 35	9 15 25 18 16 18	15 22 30 32 30 32 30 32	- 8 - 5 - 2 - 8 10 8	29 32 38 33 37 38	12 15 22 21 17 20	18 23 36 29 35 24	13 3 8 11 3 11	28 26 43 33 33 37	23 11 16 14 15 19	28 40 43 35 42 42	7 4 9 15 22 19	17 33 37 33 37 31	0 9 10 8 15	36 35 32 33 40 49	18 10 17 18 14 17	26 25 36 28 30 33	15 10 - 6 - 2 - 5 - 6	29 25 42 31 38 34	14 15 15 20 13 20	20 25 34 32 34 30	13 10 3 10 8
Mns	23.5	0.6	26.0	6.5	33.78	5.3	32.5	10.5	15.7	-1.6	34.1	13.5	24.9	6.9	33.5	14.4	34.3	12.9	28.5	6.5	32.6	11.0	28.6	5.7	31.8	14.5	27.6	6.8
							Wisco	nsin.													Iow	a.						
Date.	Eau C	Claire.	Grant	sburg	Han	cock.	La C	rosse.	Mad	ison.	Pren	tice.	Wau	sau.	Algo	na.	Ced		Char		Dav		De Moir		Dubu	que.	Keok	cuk.

							Wiseo	nsin.													Iov	va.						
Date.	Eau (Claire.	Gran	tsburg	Han	cock.	La C	rosse.	Mad	ison.	Pren	itice.	Wau	ısau.	Alge	ona.		dar ds. §§	Cha		Day		Moi		Dubi	ique.	Keol	kuk.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	47 39 45	42 15 20 22 33	44 50 46 44 45	13 7 20 22 12	45 47 39 45 44	39 24 20 26 29	49 39 41 45 43	39 19 23 27 27	51 51 37 34 54	41 24 24 27 28	42 42 32 40 40	34 14 15 22 32	42 45 35 42 38	35 20 20 23 29	52 34 44 47 38	33 11 21 26 11	53 31 39 43 54	23 26 22 27 31	50 30 41 38 44	30 18 22 26 8	54 54 41 45 59	45 22 22 23 33 24	53 33 43 39 55	33 19 22 28 20	53 53 40 40 55	44 24 24 29 20	59 46 42 47 64	46 24 24 34 24
6 7 8 9	37 37 34	6 4 3 3 19	13 35 10 35 36	- 8 3 0	48 34 36 36 35	13 9 11 3 27	27 41 33 39 38	12 15 7 7 7 17	28 38 38 34 36	14 14 6 6 21	38 28 24 28 28	8 7 - 2 - 4 20	40 30 28 30 30	13 8 6 - 1 24	25 42 32 39 37	3 12 1 7 24	24 42 22 38 38	20 17 20 9 11	16 41 24 37 36	7 13 5 8 13	29 42 38 37 41	19 18 11 10 26	25 43 30 44 38	15 18 9 10 26	25 40 35 37 38	17 18 10 10 25	32 47 38 41 43	2 2 1 1 2
1 2 3 4 5	14 34 43	0 4 12 20 33	3 18 30 43 40	-10 -12 7 15 28	26 14 37 50 37	$-{4\atop 13\atop 22\atop 30}$	17 24 40 45 40	2 0 21 23 34	21 18 40 45 41	- 2 18 27 35	20 5 26 42 42	- 8 -14 6 15 24	25 10 30 45 44	- 2 - 8 9 19 33	25 25 45 45 40	2 0 23 25 31	15 28 46 46 44	10 3 3 26 28	8 21 44 43 39	0 - 1 21 24 30	26 22 48 49 48	7 4 22 30 36	26 31 50 52 48	9 4 30 29 33	25 25 46 46 44	2 1 22 28 34	29 28 47 55 49	2 3 3
6 7 8 9	36 33 32 29 28	28 30 12 10 16	32 33 28 27 24	27 25 12 20 3	37 34 33 27 25	27 30 19 16 20	36 36 32 32 28	34 31 21 23 12	36 35 31 30 26	32 30 20 20 16	34 30 30 21 22	15 24 16 15 17	38 36 34 23 24	22 26 20 9 19	36 33 28 32 32	26 27 21 14 13	39 37 30 35 24	30 30 29 26 23	36 33 29 32 21	31 29 21 20 7	42 41 33 35 34	32 33 27 27 27 16	41 37 31 39 34	29 30 26 22 19	39 38 32 33 31	35 32 26 26 12	44 44 35 43 35	24 54 54 54
1 2 3 4 5	22 21 32 30 37	- 5 9 8 22	23 18 32 31 33	0 - 2 15 2 8	24 19 34 30 42	7 0 11 12 26	30 27 37 37 45	6 2 23 13 28	25 23 34 36 43	7 5 22 18 29	22 16 30 33 33	$-{6\atop 6\atop 6\atop 16\atop 21}$	24 18 31 30 38	10 0 8 11 22	30 32 35 38 48	- 1 21 16 23	38 34 41 46 49	13 10 10 18 18	33 32 32 39 43	- 1 21 11 23	38 33 42 48 45	15 14 25 22 31	43 37 45 52 49	16 15 25 22 25	33 31 40 42 49	12 8 25 19 30	45 39 45 53 49	1 2 2 2 2 3
6 8 9 1	22 40	18 14 7 10 10 19	35 25 43 37 40 35	12 11 8 10 12 8	35 27 44 40 34 35	23 15 26 10 12 25	33 27 46 35 39 40	18 18 16 19 17 25	34 26 46 42 36 38	19 17 22 26 23 29	27 23 40 40 29 28	$ \begin{array}{r} 18 \\ 15 \\ 2 \\ 6 \\ -2 \\ 18 \end{array} $	36 25 37 38 30 34	20 17 15 7 9 15	33 35 45 34 40 41	20 12 21 20 15 21	33 30 54 45 44 42	27 20 19 20 20 20	36 30 52 38 41 42	14 13 17 17 16 - 21	39 30 53 47 43 44	21 19 27 32 23 31	36 41 58 43 46 47	26 16 28 26 20 26	33 30 49 45 41 42	21 19 21 23 22 29	39 33 58 48 50 45	2 1 2 3 2 3
Ins	33.6	14.3	31.9	9.0	35.3	17.5	36.2	18.7	35.7	20.0	30.2	11.4	32.6	14.8	36.8	16.3	38. 2	19. 6	34.9	15.8	41.3	23. 4	41.6	21.8	39.0	21.5	44.3	24.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 5—Continued.

	Han	nibal,	Lap	orte.								Illin	nois.							
Date.		lo.	In		Cai	iro.	Masec	outah.	La S	Salle.	Ga	lva.	Carbo	ndale.	Pec	ria.	Sprin	gfield.	Winn	ebago.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	63 46 43 50 63	46 23 23 23 38 24	56 54 45 50 56	37 34 30 30 40	60 60 52 59 64	46 41 34 43 55	61 59 54 59 62	45 37 22 35 49	57 57 40 46 57	44 26 25 35 32	54 54 38 48 56	41 25 21 33 41	62 59 52 59 64	44 36 23 35 52	58 53 42 51 58	43 23 23 36 29	60 57 48 53 58	44 26 25 39 31	52 54 38 42 54	40 23 22 32 34
6	34 49 40 38 44	21 23 14 11 32	56 37 37 29 42	20 16 20 7 18	58 44 45 34 41	31 33 23 17 27	61 50 44 37 52	25 24 26 12 26	32 41 38 34 40	21 19 13 12 25	56 41 38 35 41	22 17 12 8 29	60 48 42 35 44	26 27 28 12 25	33 43 37 35 42	23 20 13 11 28	34 44 40 31 45	24 22 14 12 29	54 37 35 34 39	19 15 11 8 25
1	32 27 49 52 51	14 8 27 31 32	35 32 42 45 41	15 3 12 22 32	39 28 43 52 58	27 19 21 31 37	44 28 53 56 58	25 12 16 25 32	26 21 46 48 48	6 3 21 29 36	30 21 46 47 49	11 2 12 26 34	39 29 46 52 60	25 12 15 29 35	29 21 46 49 49	11 5 18 28 30	30 23 48 50 51	13 8 21 28 35	27 18 44 44 43	7 -1 16 24 31
6	46 46 37 45 35	26 33 30 24 25	40 44 40 32 29	34 36 30 24 18	57 59 43 45 49	33 42 33 28 34	50 57 51 46 46	21 39 30 25 28	43 44 35 34 34	33 35 28 27 19	41 41 34 35 32	28 33 24 25 20	53 58 42 45 51	21 41 31 27 30	45 44 35 36 33	27 35 28 28 28 21	47 46 36 38 37	30 36 29 28 25	40 40 35 41 31	33 33 25 23 18
11 12 13 13 14 15	38 47	20 23 27 24 32	36 40 38 38 43	28 30 11 25 25	41 44 36 30 44	29 26 27 23 27	46 43 40 53 53	18 18 21 19 26	33 31 42 45 44	16 17 23 22 31	35 32 42 46 44	11 13 21 18 26	44 48 35 43 49	19 16 23 18 27	36 31 43 47 46	15 19 21 21 21 28	39 34 43 48 49	19 24 25 24 29	30 28 30 40 45	10 10 19 14 28
26	37 58 48 48	27 22 31 37 26 28	35 33 36 38 39 40	22 23 20 26 33 33	41 41 53 45 48 50	34 27 28 36 34 36	. 43 39 61 50 51 50	28 23 22 31 31 35	38 28 50 42 41 42	23 20 25 31 28 30	39 29 53 43 40 43	26 15 22 28 22 30	50 39 55 44 50 51	33 24 20 20 20 32 35	38 28 54 42 42 43	23 20 21 32 27 30	39 29 54 40 45 41	27 21 25 32 28 31	39 29 48 45 38 30	27 17 19 27 24 29
Mean	45.1	25.9	40.5	24.3	47.2	31.7	50.2	26.6	40.5	24.4	41.4	22.5	48.6	27.1	41.6	23.8	43.3	25.9	39.1	21.4

^{*,} b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

§ § Instruments are read in the morning; the m ximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 6, MISSOURI VALLEY.

MONTROSE W. HAYES, District Editor.

GENERAL SUMMARY.

The mild, dry weather of November continued through a great part of December. In all parts of the drainage area the precipitation was less than it usually is in the last month of the year, and the temperature was considerably above the normal, except in the mountainous parts of Colorado, Wyoming, and southwestern Montana. There were, of course, several cold periods, but they were not so severe as they usually are in December, and at Havre, Mont., the lowest temperature was 1°, this being the only December since the establishment of the station, 33 years ago, in which a temperature of zero or lower was not recorded. At the end of the month the Missouri River had not frozen below Pierre, S. Dak.; in fact, it was open at Pierre, and this is believed to have been unprecedented. Most correspondents have reported the soil dry, as both the rains and the snows were light in the fall as well as during December. In localities of North Dakota cattle suffered some for water; the pools and water courses were most all frozen, and there was no snow on the ground for stock to use instead of water.

TEMPERATURE.

In the mountain regions of Colorado, Wyoming, and southwestern Montana the mean temperatures for the month were below the normal; in all the remainder of the district they were above the December average. The mean daily excesses were between 3° and 4° in the lower part of the district, and in the Dakotas and eastern Montana, where comparatively warmer weather prevailed, they were between 6° and 8°. There were several cold periods, but without exception they were moderate for December. There were no cold waves that covered the entire district, and the lowest temperatures at the various stations occurred on widely varying dates.

The weather was warmest during the first half of the month, but there were no warm waves that covered any considerable extent of territory, and there were no thermometer readings that were exceptionally high. The almost entire absence of extreme temperatures, both high and low, was one of the most noteworthy features of the month.

PRECIPITATION.

In the lower part of the district most of the precipitation occurred before the 18th. In the western and northern regions it was well distributed through the month. The amounts, however, were light in all parts of the district, and the totals for the month were markedly deficient. The snowfall in Missouri, Kansas, Iowa, and southern Nebraska was no more than a trace at most stations; at a few stations it was as much as 2 inches; in northern Nebraska, the Dakotas, and eastern Montana, and Wyoming it was heavier, but the ground was generally bare at the end of the month. In the Rocky Mountains the fall was without exception below the average.

The total precipitation for the 12 months ending on December 31 was 1 to 6 inches above the normal in all of the mountain country. There was also an excess in North Dakota, northwestern Iowa and around the mouth of the Missouri River; in the latter area the excess was the greatest of the entire district, being somewhat more than 7 inches. In the remainder of the drainage area the precipitation was deficient, the departures ranging from a few hundredths of an inch to 6 inches.

RIVERS.

There was practically a normal flow of water in all streams in the district. There was less ice than is usual at the end of the year.

Table 1.—Climatological data for December, 1912. District No. 6, Missouri Valley.

			years	Tem	peratur	, in e	degr	ees Fal	hrenh	neit.	Prec	cipitation	, in in	ches.	nydays,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		slei	Number of part- ly cloudy days.	N umber of cloudy days.	g wind	Observers.
Wyoming.																				
Arapahoe	Fremont	5,500	2 7								0.00			0	0				w.	Edw. L. Seymour.
Basin	. Bighorn	3,862	13	27.4	+ 8.2	55	9	- 5	261	43	0.00	- 0.25	0.00	0		29	2	0	nw.	O. J. Robertson.
lennett Sig Creek Station	do	7,500	1	14.0		42m	5	- 25m	28	51m	0.48		0.20	5.2	4	410	8m	- fin	SW.	- Chas. C. Young. U. S. Forest Service.
asper		5,400 5,101	3	24.7		58	14	- 4	25	38	0.67		0.22	7.2	4	12	18	1		. E. W. Bastian,
entennial	. Albany	8,074	9	19.1	******	42	131		26	30	1.99		0.50	19.6	13	12	8	ii	w.	- M. C. Cook. Louis A. Gregory.
heyennehugwater	do	6,088 5,282	11	25.3 26.7	-3.7 -1.6	51	14		25 11	32 42	0.63	$+0.32 \\ -0.23$	0.22 0.45	7.8	6 2	13	12 22	6 2	nw.	U. S. Weather Bureau. A. H. Woolever.
larkody	. Park	4,320 5,000	5	30.5		51 51	27	11	26	32	0.03		0.03	0.3	1	11	7	13	nw.	Chas. A. C. Snow.
razy Creek	do	6,828	1					5	11†		0.09		0.05	1.6	3	13	8	10	W.	D. A. Tinkcom. Jas. Smith.
ome Lakeouglas	. Converse	8,821 4,793	3	16. 2 24. 6		50	13	- 7 - 10	25 22	29	1.82		0.30	24.0	13	17	17	7 8	W. W.	Abe Mills. Henry C. Miller.
uboisatons Ranch	. Fremont	6,909	5 7	21.1 32.6		47	8 9	- 6	5	26	0.05		0.05	0.5	1	15	11	5	nw.	F. H. Welty.
cheta	. Crook	4,600		32.0	******	68		9	11	36	0.51 T.		0.20 T.	5.1 T.	0	23	20	1 5	n.	F. A. Eaton. M. R. Hunter.
lk Mountain	do	7,322	3	19.9		53 f	25	- 11	27	581	1.38		0.48	33.0 13.8	6 9	71			W.	Wm. Richardson. U. S. Forest Service.
rvay	. Natrona	6,400	34	01 0		39	14	1	25	24	0.35		0. 28	5.4	3	15	5		SW.	Frank Jameson.
oxpark	. Laramie	4,270 9,015	2	6.6		39	15	- 31	22	44	1.33		0.60	12.9	8 2	8	15	8	sw.	- John Hunton. U. S. Forest Service.
ermania illette	Bighorn	4,312	6	22.0 25.8		47	12 14	- 1 5	23	38	0.14		0.10	1.5	2 2	13	5	13	nw.	J. W. Peper.
orse Creek	. Fremont		1													8		12		
unters Station	. Bighorn	8,000 4,632	13	26.3	******	55	18	- 9	20	38	T.		T.	T.	0	19	11	1	w.	Do. Wm. Booth.
rehirtley	. Converse	5,050	8	96.6		40	14		00	97	0.72		0.20	7.3	5	14	14	3	nw.	P. L. Ford.
irwin	. Park	9,187	3	26.6 17.7		49 38j	14	- 1 - 2	22 10†	37	0.00	*******	0.00	23.5	7	13	14 6j	4 7	nw.	D. M. ZumBrunnen. C. L. Tewksbury.
nowles		4,500	3 2	28.3		53	14	0	25	37	0.30		0.12 0.13	6.3	7	6	8	23	nw.	Geo. A. Knowles.
nder	. Fremont	5,372	20 21	20.8	+ 1.6	49	29	- 4	22	46	0.40	- 0.30	0.18	6.2	4	17 15	10	6	w. sw.	Owen Shupp. U. S. Weather Bureau.
ramie	. Carbon	7,188 6,878	10	18.4	- 5.2	47 33	12	- 15 - 5	21 22	49	0.77	- 0.25	0.22	7.7	11	17	9	10	w.	University of Wyoming. C. A. Cowdin.
olabama Ranch	. Park	7,052 3,825	8	20.4		46	91	- 8 - 1	5	42	0.32		0.12	6.0	4	15	12	4	W.	Mary E. Painter.
usk	. Converse	5,007	21		+ 0.1	50	13		221	32		-0.46	T. 0.07	T. 1.3	0 2	14	14	3	S.	R. Fred. Harrison. D. E. Goddard.
anvilleoorcroft	. Crook	5,050 4,111	8	26.5		53	9	2	22	40	0.55	******	0.15	6.0	5	7 15	20	12	sw.	L. C. Stoddard. C. T. McCampbell.
oore ewcastle	. Albany	6,000 4,319	11 5	26.4 24.6	- 2.6	47	13	- 6	11	38	0.21	- 0.23	0.12	2.1	7	8	16	7	W.	Edwin Moore.
thfinder	. Natrona	5,735	6	21.0		47	9	- 2	22 22	35 24	0.60		0.25	6.0 15.0	5	15 16	6 7	10	n. sw.	Dr. S. W. Johnson. U. S. Reclamation Service
nebluff ne Ridge		5,038	9	27.2		58 e	10	20	26	480	0.48		0.18	6.0	3 4	14m 8	2m 12	211	nw.	C. L. Beatty.
owell	. Park	4,376	10	25.7	******	47	91	- ² 7	26	34	0.00	******	0.00	0.0	0	21	2	11 8	nw.	J. E. S. Altaffer. U. S. Reclamation Servi
awlinsiverton	Fremont	6,748	10	19.0 20.0	- 4.0	39 47h	13†	- 10h	22	26 55h	0.57	- 0.27	0.15	7.5	7 3	15	11 3h	5 3h	W.	E. J. Ehrenfeld. F. H. Allyn.
ock Riverockypoint	Crook		****		******						0.54		0.35	11.0	4 2	19	15	8	e. nw.	F. T. Cummins.
ratoga even-Mile Creek	Carbon	6,785	14	21.2	- 1.1	48	15	- 6	22	40	0.53	- 0.60	0.15	7.0	4	20	2	13	W.	P. Woxen. R. G. Hamilton.
eridan	Sheridan	3,790	17	28.6	+ 6.4	41 56	15	- 14	22 22	36	0.67	- 0.45	0.15	12.0	8	18	6 9	7 15	w. nw.	U. S. Forest Service. U. S. Weather Bureau.
oshone Dam	Park	5,385 4,635	20	*****																. U. S. Reclamation Servi
outh Pass City	Fremont	7,873	10	13.4		34	13	- 19	22	43	0.76	*******		11.9	6	16	7	8	SW.	Joel C. Smiley. John Sherlock.
indance hermopolis	Fremont	4,750 4,350	8	23. 0		43		- 2	21†	31 38	1.18	******	0.26	16.5	8	9 22	12	10	W. SW.	Geo. W. Ashdown. A. L. Duhig.
nornton	Weston	4,448												*****				****		Geo. H. Ferguson.
erona	do	4,360	3								0.28			2.0	1	21	17	12	s. nw.	W. H. Coleman. O. A. Roode.
heatland. iants Ranch	Carbon	4,700 7,400	1 2			52	14	- 5	11	35	0.34			5.3 8.6	4	21 13	12	6	W. SW.	O. A. Roode. A. deF. Snively.
oodrockorland	Sheridan		2				04		90	44.	2.38	******	0.67	29.2	8	9	10	12	SW.	Ira G. Wiant. U. S. Forest Service.
vncote	Laramie	4,207	5	29.4		64	8† 14	- 8	26 22	48	0.02 T.	*******	T.	0. 2 T.	0	25° 15	15	1	nw.	Prof. B. C. Buffum. U. S. Reclamation Service
ellowstone Fairview Dome	do	6,200 7,000	24	18.4	- 3.2	38 39		- 8 - 18	22 21 22	25 46	1.47	- 0.35	0.52	14.9 17.1	18 12	5 5	12 12	14	8. W.	U. S. Weather Bureau. United States Army.
FountainGallatin	do	7,220	6	14.6		40	5		20	49	2.45		0.70	24.5	6	7	3	21	W.	Do.
Grand Canyon	do	7,900	5	17.0		34	1	- 6	25	25	2.16		0.36	24.0	9	9 5	9	13 15	n. n.	Do.
Lake Yellowstone	do	7,733 7,525	8	11.4		35	10 12	- 20	21	49	2.55 1.88		0.63	20. 4 25. 6	7 13	8	0	23 17	se. w.	Do. Do.
Riverside	do	6,500	8	11.2		37 37	13	- 19	25	40	1.67		0.32	16.5	11	5	1	25	sw.	Do.
Sylvan Pass Thumb	do	7,000 7,772	5	18.4		41	6	- 16	25	37	1.87		0.57	26.0	5				w.	Do. Do.
Fower Falls Upper Geyser Basin	dodo	6,250 7,395	8	14.8 13.0		39 44s		- 18 - 15s	25 21	32 39∉	1.98 1.40		0.30 0.60	19.8 14.0	11 4	11 2s	14 7s	6 15s	sw. nw.	Do. Do.
Montana.‡	. Cascade	5,200	13	27.4	+ 1.5	48	9	0	11	25	1 00	1 0 00	0.40	10.0		17		10		Mars Docate D. D.
gricultural College	Gallatin	4,700	14	23.0	-0.8	46	13	0 3	11 11+		0.74	+ 0.06 - 0.30 - 0.13	0.40 0.32	12.0 13.0	6	11	7	13	w. s.w.	Mrs. Bessle F. Burch. J. L. McGraw.
ugusta	Lewis and Clark Teton	4,071	13	28.0	+ 1.1	59	9	- 10	29	49	0.40	- 0.13	0.20	4.0	3	18	12	7	w.	J. L. McGraw. C. C. Covington. U. S. Reclamation Service
ald Buttegtimber	Lewis and Clark	6,500	5 2 6	******		E.4					1.78	*******	0.29	27.9	13	10	4	17		M. W. Alderson.
gtimber Creek	do	4,072	2			54	9	5			0.15	*******	0.10	1.5 6.9	5	14	17	16	W.	F. A. Severance, J. T. Mjolsness, Dean J. Cole.
llings. rch Creek.	Yellowstone	3,115 4,060	16	31.6	+ 3.9	60	9	4	11	34	0.04	- 0.37	0.04		1	15	10	6	W.	Dean J. Cole.
ackleaf	do	4,260	4	28.7		58	8	0	5†	33	0.30	*******	0.17	6.7	5	12a				Roy McNeal.
oulder Nursery	Beaverhead	4,920 6,060	16	26.6p	+ 4.0	46p	8† 13	- 22 - 2 - 2j	11 25	32p 40		+ 0.25	0.16 0.28	6.3	15	0p	13p 14	20		U. S. Forest service.
idger	Carbon	3,664	5 3			50	91	- 2	25 11	40	T.	*******	T.	T.	0	8a	124	100	8.	L. E. Gard. Thos. S. Hunt.

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Table 1.—Climatological data for December, 1912. District No. 6—Continued.

			vears	Temp	erature	, in d	legro	es Fah	renh	eit.	Preci	pitation	, in ine	hes.	days,		sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	100	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind tion.	Observers.
Montana-Continued.													0.21	9.0	6	3	12	16	w.	U. S. Reclamation Service
rowning	TetonRosebud	3,980	8	23.1 28.6		58	9	- 1 5	5	35 42	0.09		0.04	0.5	4 2	9 16	12 11	10	w. w.	Rev. G. A. Linschoid
usteed	Sweet Grass		4 2	32.9		60	9†	- 3	11	30			0.03	0.7 8.0	8	11	10	10	n.	T. H. Busteed. W. J. Crowell. W. L. Kirk. Dr. E. E. James.
abin Creekanyon Ferry	Beaverhead Lewis and Clark	3,644	13		+ 6.4		3	7	25	25	0.03	-0.39	0.03	1.0	1 3	13	22	7 5	nw.	W. L. Kirk.
ascade hessman Reservoir	Cascade	3,361 5,275	7 3	33.4 23.8			9	- 3 0	11	45 35			0.28	5.2 15.9	12	18	0	13	nw.	C. D. Schmidt.
hester	Lewis and Clark Hill	3, 140	8	21.6		52	13	- 11	25	55 41	0.50		0.20	5.0	3	18	5 18	8	SW.	E. D. Keith. T. O'Hanlon Co.
hinooklearcreek	Blaine	2,502	13	33. S4	+ 7.8	52°	10	- 3 - 4d	1	44d	0.33	- 0.37	0.15	3.3	3	140	110	10	SW.	Cortez Sedgewick
lemons	Lewis and Clark	4,672	2					- 1		41			0.08	6.7	6 10	13	8	20	w. nw.	Frank Eberl. Frank Taylor.
lydeparkonrad	ParkTeton		1	25.0 31.2				4		43	0.25	******	0.15	5.0	2	13	11	7	nw.	Robert J. Kelly. Orville Harris.
opper	Meagher		7		+ 8.1			10	5	36	0.17	- 0.68	0.04	3.0	6 2	7 14	13 13	11 4	w. nw.	Harry Throssell. G. H. Coulter.
row Agencyulbertson	Rosebud Valley	3,041 1,927	29	23.8	+ 9.5	48	271	- 10	11	52	0.55	+0.28	0.20	3.5	4	12 17 i	7 31	12 51	nw.	G. H. Coulter. Chas. N. Thomas.
ut Bank	Teton	3,700	13	31.4	+ 8.5	57	9	- 5	5 5	61 i 27	0.13	- 0.52	0.10	2.5	4	16	8	1 7	W.	P. J. Griesenauer.
Denton	Fergus Beaverhead	5, 147	14	25.8	- 0.8	53	3	0	25	27 37	0.87	+0.09	0.20	7.2 15.0	10 9	12	7 5	12 20	SW.	Prof. J. E. Monroe. J. C. Stuart.
Ory Creek Ory Wolf Camp	Broadwater Cascade	5,500 6,000	3								1.31		0.24	25.4	14	1 7	11	13	SW.	Mrs. Harriet R. Eveleth.
Dunkirk	Teton	3, 293									0.08 1.05			T. 15.0	15	27	8	20	SW. W.	B. C. Protzman. John Eberhart.
EastGallatin River	Gallatin	6,000	3 11	27.8	+ 6.4	51		- 3	8	42	T.	******	T.	T.	0 18	14 13	9	8 12	w. sw.	William Freese. James Heagan.
Clkhorn	Jefferson	6,576	3 7	27.8		57	9	1	ii	45	0.65			10.9	1	21	9	1	W.	Mrs. A. C. Gifford.
allon	Custer Meagher	2,208 6,000	3	26.6		50	9	1	21	45	0.28		0.13	5.9 19.9	8	11 8	8	12	w. w.	Lewis Cameron. O. B. Tilton.
rish Creek	Silver Bow	8,500 6,000	1	26.3		49	8 28	2 2	5	40	0.40	*******	0.14	5.0	4	9	3	19	nw.	Alta Williams.
orsyth	Rosebud	2,514	5	32.9		60	91	6 8	11 10		T.	- 0.57	T.	T.	0		10	11 0	nw.	H. Mackenzie. Jere Sullivan.
Fort Benton	Chouteau Lewis and Clark	2,630 4,004	32	26.0	+ 8.1	47	41	4	13	41			*****			. 4	14	13	W. SW.	Post Hospital. U.S. Reclamation Service
ort Shaw	Cascade	3,500	23	32.0	+ 0.1	52	10	0 7	6 5	37	0.10	- 0.37	0.03	T.	1	13 14a	5 5ª	13	nw.	E. K. Bowman.
oster	Yellowstone	5,500	3												i	13	10	8	w.	W. M. Leonard.
lasgow		2,092 2,069	15	23.8	$+10.0 \\ +10.5$	63	9	- 9		63	T.	-0.35 -0.65	0.20 T.	0.2	0	18	9	4	nw.	E. C. Leonard.
Hendive	Hill		4	25.5		50	13	1 7			0.13			3.0	2 2	7	14 18	10		Joseph Berthelote. J. S. Rue.
Fraham	Custer	. ,700	6	28.2 14.7=		. 35m	13	- 21	1 20	42"	0.40		0.07	5.5	11	7=	40	7 7 11	a	P Kerzenmacher. Robert Deardorf.
Freat Falls	Cascade	3,350 6,000	20	35.4	+ 6.5		8	9	11	30	1.21	- 0.33	0.07	1.9 7.1	6 7	17	24 12	2	nw.	Gordon Deans.
Halfway House	Meagher	4, 165	4	29.2		. 56	10				T.		T.	T. 1.3	0		6 5			Joseph Muir, U. S. Weather Bureau.
Havre	Hill	2,505 4,110	32	28.7	+ 7.8 + 5.6	54 48		10			0.11	- 0.52 - 0.43	0.14	3.8	10	4	14	13	SW.	Do.
Highwood	Chouteau		. 5				9	8	5	32	1.12		0.40	11.9		16 21	10	12		W. S. McCord. U. S. Reclamation Service
Huntleyones Canyon	Yellowstone	3,014 6,800	6 3					1			0.98			5.5			10			James McCune. W. C. Henderson.
ordan	Dawson		6	****							******	******								F. H. Knoble.
Knobles Ranch	Fergus	4,010	14		+ 3.3							- 0.41		8.8 5.0		13	6			W. W. Watson. E. Wilson.
Lytle	do		6	29.2		. 50	3	1 8	1	1 31	0.09		0.05	1.4	2	23	6	2	SW.	J. F. Fait.
Malta	Valley	2,240	5	26.4		. 55		- 3 - 12		43				T. 2.2	1 4		16			U. S. Reclamation Service J. S. Collier.
Medicine Lake	Custer		. 3								Т.		. T.	T.	0	9	21	1	nw.	Leon B. Clark. U. S. Weather Bureau.
Miles City	Madison	2,371	20		+10.8	54 46	27	13		31	0.08	- 0.54	0.03	7.0			3	13	8.	Madison River Power Co
Nerris Olsen Creek	Jefferson	6,345	3								0.54	******	. 0.17	17.9	8	5	12	14	W.	Robert Olsen. G. W. White.
Pinegrove	Musselshell Jefferson	7,000	3				1				0.89			20.5			13		n.	Mrs. T. Keirmeyer,
Plevna	Custer	2,757 2,020	26	26.8	+ 9.3			- 5 - 10		43		- 0.48	0.04 T.	3.4 T.	4				nw.	C. C. Conser. H. M. Cosier.
Poplar Red Lodge	Carbon	5,548	12	23.4	- 1.5	46	9	- 2	11	† 34	0.40	- 0.22	0.18	10.0		13	8	10		I. A. Draper. F. B. Elmer.
Renova	Jefferson	4,383	13		+ 1.2			0	25	46	T.	- 0.19	. T.	T.	0	12	1 7	12	W.	H. Scherfenberg.
Savage	Dawson	2,050	6			- 57	9	- 9	11	52	0.09		. 0.05	T.	2	15	12	4	S.	U. S. Reclamation Service. C. D. Kicher.
Shelby		3,276	. 1	30.2		. 65							0.04	0.8	1		0		W.	Fred W. Arndt. Mrs. H. L. Miller.
Springbrook	do		10		+ 6.2		27	- 11	11	45	0.05	- 1.08	0.03	0.8		8 6	19	6	SW.	Estelle W. Estill.
Stearns	Blaine		. 1	24.6		. 46	8	t - 2	21	† 38			. 0.15	2.6	4	9	7	15	W.	C. R. Noyes. U. S. Reclamation Service
Sun River Canyon Frail Creek		4,650 6,000				-					0.64		0. 22	17. 4		19			W.	A. Weidenbauer.
Jtica	Fergus	5,000	17	29.6	+ 2.7	59						- 0.34		4.8 T.	1 2		3 80	10		P. W. Korell. B. M. Bean.
Valentine	Teton		. 5	. 30. 4							0.10		. 0.05	5. 5	1 8	10	b 7	10 12	b W.	R. M. Templeton. W. R. Baker.
Virginia City	Madison	5,880									0.50			5.8			18	3	nw.	D. L. Doig.
Wall Rock Mountain Warm Springs Creek	Madison	7,500									. 0.59		. 0. 13	7.6						M. D. Lytle. P. O. Balgord.
Wheaton Whites Ranch	Musselshell			. 35. 2	1		1			26	. 0.02		. 0.02	T.	1	1 19	1	5 7	nw.	Glen A. White.
White Sulphur Springs.	Meagher			. 26.3		. 46	9	2	2 25		T. 0.05		. T.	T.	1					J. Rogers.
Wilder Wolf Creek		4,000		32.6		. 55			5 11	33	0.11		. 0.05	0.6	3 4	4	11	1 16	S.	A. J. Reed. Anna C. Kinman.
Woodville			3								. 0.54		0. 10	7.0	11	5 4	1	10	, aw.	Annu V. Ismaigh
North Dakota.										40	0.10		0.10	1.0		1 16		10	nw.	J. C. Hagelbarger,
Aplin			. 0	21.4		. 55	9			3 46										A. B. Waterman.
Ashley	McIntosh	2,001		20.9		49				3 49 3 40		+ 0.17				$ \begin{array}{c c} 2 & 17 \\ 1 & 25 \end{array} $		1 13		D. J. Steiner.
BeachBelfield		2,583	1								T.	- 0. 26 - 0. 22	. T.	T.		0 16	3 1	8 7		Harry Dence.
	McLean				+ 4.1	55		1- 1								3 10	1 1	2 1 4	1 43 437	

Table 1.—Climatological data for December, 1912. District No. 6—Continued.

			year,	Temp	perature	e, in c	legre	es Fah	renh	neit.	Prec	ipitation	, in in		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy d 0.01 inch or mor	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind tion.	Observers.
North Dakota—Contd.																				
uford	Williams Morton	1,944	7	24. 5 26. 1		53	9	- 10 - 8	11 18	48	T. 0.30		T. 0.30	T. 3.0	0	10 17	9 4	12 10	nw.	C. H. McCune. D. J. Basquin.
ickinson	Stark	2,543	20	24.0	+ 5.3	63 59	15	- 9	11	50	T.	- 0.51	T.	T.	0	7	19	5	nw.	L. R. Waldron.
dgeleynergy	Lamoure	1,468	11	21.2	+ 6.3	55	9	- 11	8	47	0. 28	- 0.32	0. 20	3.8	2	13	8	10	nw.	O. A. Thompson. T. L. Stanley.
pping	Williams		5								0.20		0. 10	3.0	3	18	4	9	W.	M. E. Uggen.
afferton	Dickey McLean	1,439	14	19.6	+ 5.3	52 51	9	- 12 - 12	8	39	0.63	- 0.11	0.38	6.1	6 5	14	15	8	nw.	F. O. Alin. G. L. Robinson.
aley	Bowman		4	26. 6k		62k	27	4k	18	51k	0.02		0.02	0.2	1		14		nw.	A. O. Lawrence.
ettingeroward (near)	Adams Divide	2,275	6	24.9		56	9	- 9 - 13	8	52 48	0.46		0.01	0.5 5.2	1 5	12	19	8	nw.	W. R. Lanxon, C. P. Amsbaugh,
mestown	Stutsman	1,390	25	18.6	+ 3.4	52ª		- 18 - 21	11		1. 15	+ 0.40	0.30	11.5	8 3	16 22		15	nw.	Thos. Pettigrew.
amoine cHenry (near)	Kidder Eddy		3	17. 6		49	9	- 21	8	40	0.40		0. 20	4.0		22			nw.	E. V. Virgin. John Knox.
armarth (near)	Bowman Stutsman		5	26. 2 15. 2		54° 48	13	- 4 - 26	81	43°	0. 14		0.07	5.4 7.5	5	14		7	nw.	S. P. Grane. H. H. McCumber.
arstonmooredora	Billings	2,225	16	23.6	+ 3.2	72	3	- 22	31	78	T.	- 0.48	T.	T.	0	8		3	W.	J. W. Hesser.
elvilleott	Foster	1,590	15	18.6°	+ 6.6	50° 50	13	- 18°	11	47 38	0. 20	- 0.09	0. 20	2.0	5	12	6	13	nw.	J. P. Kidder. O. H. Opland,
apoleon	Logan	1,955	21	18.4	+ 5.3	52	9	- 17	8	49	0.35	- 0.27	0. 15	7.0	3	12		18	W.	C. J. Hoof.
ew Englandew Rockford	Hettinger Eddy	2,400 1,531	17	18. 4	+ 7.4		9	- 10 - 13	6	63 51	0. 05	- 0.35	0.03	0.5	3	5	19	7	nw.	J. M. Connolly, J. V. M. Sundberg,
ew Salem	Morton	2,163	6	22. 2		59	9	- 14	8	42	0.40		0.30	4.0	2 2	18		5	nw.	J. Christiansen.
range	Adams		6			59	9	- 12	8	30	0. 15		0. 10	3. 0		10			nw.	J. E. Goforth. R. E. Sheriff.
teele	Kidder	1.857	17								0. 12 0. 25	- 0.22	0.09	1. 2 2. 5	3	19		2 7	nw.	H. S. Wood.
artle Lakeashburn	McLeando	1,731	9	21.6		52ª	9	- 9a	8	37	0. 05		0. 10	0.5	1	14	13	4	W.	E. G. Ranum. W. R. Peterson.
illiston	Williams	1,875	33	23. 5	+ 8.0	52	9	- 10	11	42	0. 18	- 0.48	0.09	1.6	5	5	15	11	SW.	U. S. Weather Bureau.
South Dakota.																				
berdeen	Brown	1,300	22	20. 1	+ 3.8	52*			8			- 0.52	0.20	3.5	3	12 15		12 5	w.	D. G. Gallett.
cademy	Charles Mix Hanson	1,352	13 23	26.8	$+7.5 \\ +6.0$	59 58	30	- 14	12		0.28 T.	- 0.51 - 0.64	0. 15 T.	2.7 T.	0	20		8	nw.	I. T. Lothrop. C. H. Stilwell.
mour	Douglas	1,521	16			58	13	- 3	30	54	Т.		T.	T.	0	9	16	6	nw.	T. J. Markey. U.S. Reclamation Service
ellefourche	Butte	1,636	23	32.6 23.6	+ 4.5	53	14	- 12	61		0.20	- 0.36	0.12	2.0	2	12		13	nw.	Experiment Station.
yant	Harding	1,846	20	26.8	+ 3.1	54	9	0	17	42	0.05	- 0.37	0.05	2.0	1	9	11	ii	nw.	J. W. Ault. U. S. Forest Service.
imp Crook	Lincoln	1,248	17	24.6	+ 2.7	56	14	- 10	6	46	0.20	- 0.43	0.20	2.0	1	26	1	4	nw.	John H. Holsey.
ascade Springs	Fall River	3, 422 1, 685	6	28.8 22.5		57	14	- 11	22 11	48	0.00		0.00	0.0	0 4	19		18	nw.	Fred Noerenberg. M. N. Bradley.
enterville	Turner	1,229	15	26.6	+ 4.2	57	30	- 6	6	46	0.41	- 0.49	0.30	4.1	4	8		8	DW.	Frank Williams.
amberlainark	Brule	7,363	18		+ 7.7 + 3.1	55° 52	10	- 6°				- 0.52 - 0.09	0.00	0.0 5.2	7	13	13	5	nw.	W. B. Van Horn. O. H. La Craft.
ottonwood	Stanley	2,414	4	28.8			14		8	51	0.12		0.12	1.3	1	8		8	nw.	Experiment Station. R. P. Imes.
aviston	Custer Perkins	5,316	3																	P. A. Sattler.
eadwoodeerfield.	Lawrence Pennington	4,535 6,000	3	27.4		58	9	3	12	45	1.32		0.55	9.0	9	14	16	6	nw.	R. E. Grimshaw. Frank E. Miller.
e Smet	Kingsbury	1,726	19	23.0	+ 4.8	53a					T.	- 0.66	T.	T.	0	2	23	- 6	nw.	W. E. White.
owling	Stanley Lawrence	2,250 6,195	3	29.8		55	13	- 3	8	49	0.20		0.20	2.0	12	15		8 9	nw.	M. P. Dowling. A. B. Wood.
agle Butte	Dewey	2,415		26.3		55	14	- 7	8		0.11		0.09	1.0	3	17	13	1		. Dr. John F. Chandler.
alesk Mountain	Potter Custer	4,700	3								0.39		0.27	3.7	8	12		6	nw.	A. H. Peterson. James E. Blaine.
lingson	Perkins	5, 723		25. 3d			9	- 5d	81	484	0.02		0.02	0.2	1				nw.	Carl G. Moen. T. J. Cummins.
nglewood	Lawrence McPherson	1,884	3	20.2		55	9	- 14	8	53	0.11		0.06	3.7	3	14		1	nw.	Experiment Station.
airfaxaulkton	GregoryFaulk.	1,595	8 17	30.6	+ 6.9	59	30	- 4 - 12	8	52	0.15 0.30		0.12	1.8	. 2	23 17		3 7	nw.	U. G. Stevenson. Miss Belle Talcott.
andreau	Moody	1,565	22 20	24.6	+ 6.2	55	14	- 8	6	45	0.50	- 0.18	0.30	5.0	2	9	6	16	W.	D. R. McLean.
orestburgort Meade	Sanborn Meade	1,231 3,624	20	31.4	+ 6.2 + 7.0 + 3.9	55 59 58 55 58 63	30	- 10	12	53 40		- 0.22 + 0.39	0.20	3. 6 6. 1	3 4	21 5	4	5 22	nw. w.	S. S. Judy. Post Hospital.
ederick	Brown	1,371	29 3 3	19.6	T 0.0	57	9	- 16	12 8	50	0.15		0.12	2.5	9	13	3	15 8	nw.	J. E. Jeffers. H. C. Hoffbuhr.
eenmont	Lawrence Charles Mix	6, 430	20	31.6	+ 5.8	60	30	- 2	8	57	0.50	- 0.17	0.20	14.5	2	16	10	5	nw.	T. C. Williamson.
ardingroveardy Ranger Station	Stanley			27.2		56	13		12	57	0.02 1.49		0.02	0.2 27.9	13	7 9	15	9 16	nw.	Mrs. Laura Sinclair. Mrs. Mary M. Schmidt.
arveys Ranch	Lawrencedo	6,282	3 2 6								1.37		0.35	27.7	9	12	3	16	W.	Jerome Harvey.
ermosalghmore	Custer Hyde	3,278	16	31.0	+ 5.7	69b 52	13	- 12	21 8	42b	0.09		0.09	1.0	1 2	13 15	16	12	n. nw.	S. M. Booth. Experiment Station.
pewell	Stanley		2	28.5		56	27	- 8	8	55	T.		T.	T.	0	15		6	nw.	E. R. Myers.
oward	Miner	1,564	20 10	21.4	+ 1.7	55°	30	- 14°	6 8	48	0.22		0. 14	1.0	4	18	10	3	nw.	M. A. Shuster, jr.
iron	Beadle	1,306	30	24.2	+ 7.1 + 8.5 + 6.2	56	9	- 8	8	49	0.20	- 0.42	0.10	2.0	5	11	9	11 5	nw.	U. S. Weather Bureau.
swichadoka	Edmunds Stanley	1,530 2,467	15	29, 44		59 e	9	- 15 0d	8	59 484	T.	+ 0.02	0. 18 T.	5.5 T.	0	12	23	2	w. nw.	H. J. Dailey. Rev. D. S. Brown.
ennebec	Lyman	1,689	19	26.4	+ 5.1 + 6.4	584	9	- 5	61	43*	0.25	- 0.20	0.20	2.5	2	16		5 7	nw.	R. C. Van Horn.
mball	BruleSpink	1,400	23 15	21.8	+6.4 + 4.1	54	30	- 5 - 7 - 15	8 22 5	47 54	0.06 0.16		0.05	0.5	3	17 17	5	9	nw.	G. D. Rose. E. L. Ebbert.
ad	Lawrence	5,200	3	26. 4		53	9	3	5	31	0.84		0.20	19.0	14	10	16	5	nw.	E. F. Irwin. Arthur T. Briggs.
emmonanderson	Perkins		8	******																W. A. Spencer. M. H. Dains.
arion	Turner	1,447	11	27.6	+ 6.8	57	30	- 7 - 13	6 7	42 59	0.26		0.23	2.2 1.0	2	8 5		6	nw.	M. H. Dains. J. W. Kozel.
arstoneadow	Sully Perkins		4	26. 2 25. 6		52 52	9	- 5	11	52	0.01		0.01	0.1	1	23	2	6	nw.	Hillard Wybenga. Frank A. Howe.
ellette	Spink. Hutchinson	1,300	17 15	23.4	+6.4 + 5.1	53	30	- 12	6 5	53	U. 42	+ 0.03	0.30	3.1	2 2	14 20		9 7	nw. se.	Frank A. Howe. J. S. Headley.
ennoilbank	Grant	1.148	21	22.4	+ 4.1 + 5.8	52 53 55 55 56	14 30		8	53	0.52	- 0.28 - 0.23 - 0.46	0.30	4.0	6	18	5	8	nw.	Miss Mary Patridge.
itchellobridge	Davison	1,312	18	27.2 24.4		56 58	30	- 8 - 4 - 5	11	48	0.18 0.35	- 0.46	0.08	3.0	3 2	14		3 14	nw.	C. W. Downey. Thomas J. Morris.
UNA BURUARA ARABARA	T	2,300 3,339 1,600 2,920	1 4	30.7		60	30	- 1	12 12	53			T. T.	2.5 T. T.	0	21	9	1	nw.	L. C. Bode. J. E. Strouse.
urdo	Lyman Fall River	2,000	20	00.1	+ 3.3	58	14			51		- 0.77			0	19	12	0	sw.	

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Table 1.—Climatological data for December, 1912. District No. 6—Continued.

			years	Temp	perature	, in c	legre	es Fah			Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	1	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	of pe	Number of cloudy days.	Prevailing wind tion.	Observers.
South Dakota-Contd.																				
Ottumwa. Parkston Pierre. Plankinton Polloek Rapid City Redfield	Aurora Campbell Pennington	1, 400 1, 572 1, 528	20 18 6 24 14		+ 9.4 + 4.8 + 5.6	57° 56 57° 62 53	27	- 8° - 1 - 17° - 0 - 10	8 22 22	52 55b 38 61	0.10 0.51 0.01 0.32 0.53 0.21 0.10	- 0.49 - 0.32 - 0.25 - 0.31	0.05 0.36 0.01 0.16 0.20 0.11 0.10	0.5 6.1 0.2 3.5 4.0 2.4 1.0	2 3 1 2 6 5	16 18 10 12 13 12 23	10 12 15 12 12 12 10 4	5 1 6 7 6 9 4	nw. nw. nw. nw. w.	J. W. Bretz. W. C. Rempfer. U. S. Weather Bureau. W. G. Andrews. J. H. Jones. U. S. Weather Bureau. A. S. Hall.
tochford Losebud Voslyn Seiby Sious Falls Sisseton Sorum Spearfish	Pennington Todd. Day. Walworth. Minnehaha Roberts. Perkins	5, 228 2, 600 1, 400 1, 202	2 18 6 4 21 6 1 22	30.8 20.0 23.8 27.2 24.7 26.7	+ 6.1 + 6.9 + 2.1	54 46 55 53a	27 4† 14 13	- 18 - 18 - 9 - 6 - 12 - 8		38 ^b 41 50 52 ^a 42 ^a 48	0.47 0.70 0.38 0.31	- 0.40 - 0.41 - 0.79	0. 18 0. 20 0. 20 0. 31 0. 20 0. 04 0. 29 0. 07	8.3 7.0 3.8 3.5 5.0 0.8 1.5	10 6 4 1 3 3 1 1	5 15 12 19 20 21 14 13	17 14 8 9 8 0 7	9 2 11 3 3 10 10	nw. nw. nw. nw. nw. nw. nw.	Mrs. M. E. Deffenbaugh. W. M. Ege. O. O. Floren. Miss Gertrude Hall. J. H. Bechtold. George Gray. M. S. Eberhart. A. E. Johnson.
Stephan Fama Fimber Lake	Hyde Mende Dewey	1,840	8 3	26.4		54	9	- 11	8	52	0. 15		0. 10	1.5	2	15	8	8	nw.	Rev. A. Mattingly. Mrs. Monte Franks. R. T. Hollihan.
Cyndall. Vale Vermilion. Waters Ranch Watertown. Watertown.	BonhommeButteClayLawrenceCodingtonLake	1,418 2,765 1,222 4,000 1,735	15 4 11 2 18 19	28.8 31.0 29.9	+ 3.9 + 6.3 + 2.3 + 5.3	60 60 57 49 55a	30 24 14†	- 8 - 3 - 4	6 22 6 8†	46 57 57 59	0. 22 0. 09 0. 35 0. 23 0. 30	- 0.40 - 0.50 - 0.15 - 0.55	0. 20 0. 09 0. 30 0. 11 0. 17 0. 08	2.5 1.0 3.5 3.9 3.0 0.8	3 1 2 6 4 1	17 3 23 4 9.	10 24 3 10 3 6	4 4 5 17 19 3	nw. nw. nw. nw. sw.	F. F. Chladek. U. S. Reclamation Service Prof. E. C. Perisho. George Waters. Robert Q. Wood. R. C. Zimmerman.
Wessington Springs White Lake Winner Yankton	Jerauld Aurora Tripp	1,410 1,646 2,000	12 3 38	29.4	+ 6.8	58 57	14	- 1 - 1	7	41 36	T. 0.10 0.49	- 0.24	T. 0.10 0.47	1.5	0 1 2	9 18 13	10 5 6	12 8 12	nw. nw. nw.	Mrs. N. J. Dunham. Mrs. G. A. Rogers. J. W. Barnum. U. S. Weather Bureau.
Minnesota.		-,									0.10							-		C. O. Weddies Datesta
ipestone	Pipestone	1,710	11	22.6	+ 4.0	60	14	- 10	11	55	0.25	- 0.17	0.10	2.5	.4	21	6	4	n.	A. L. Doan.
Colorado. rriba. uldhurst. ennett (near). oulder. uurlington assells asstle Rock heesman. heyenne Wells. ope	Boulder Kit Carson Park Douglas Jefferson Cheyenne	8,500 5,484 5,347 4,160 8,445 6,220 6,890 4,279	6 2 4 16 9 2 20 9 20 15	31.4 31.6 24.6 28.7	- 3.5 - 3.5 + 0.2	60 60 62 64	14 14 14 24	2 3 	26 6 26 26 26	35 42 59 58	0.64 0.69 0.42	- 0.52 - 0.05 - 0.44	0.55 0.21 0.32 0.13 0.10 0.52 0.33 0.33 0.02	5.5 5.0 7.0 2.4 4.0 7.8 12.0 4.1 0.5	4 3 2 2 2 2 2 3 2 1	23 16 26 18 17 20 24 18 27	8 11 3 11 13 8 5 12 2	0 4 2 2 1 3 2 1 2	nw. s. sw. w. nw. w. n. s.	C. A. Creel. Mrs. Alice A. Auld. J. F. Egelhoff. Prof. J. A. Hunter. W. P. Davis. Harriet M. Cassell. Thos. P. Vaughan. J. G. Thornburg. J. W. Adams. Mrs. Dora M. Christophe Mrs. Dora M. Christophe
orona	Grand Denver Jefferson Larimer	11,660 $5,272$	5 40 4 3 33	30.5	- 1.7 - 3.4		14	- 12 3 - 7 - 11	6 6†	36 48	0.54 0.30	- 0.15 - 0.13	0. 31 0. 40 0. 15 0. 10	7.5 5.8 6.0 3.2	4 3 3 3 3	0	9 9 12 15	1 1 19 2	w. sw.	U. S. Weather Bureau. Do. N. P. Levin, M. D. G. H. Thomson. Colorado Agr. College.
ort Lupton ort Morgan 'rances 'rys Ranch eorgetown	Weld Morgan Boulder Larimer	4,907 4,319 9,300 7,500 8,550	2 14 7 2 10	27.3 19.5 23.9	+ 0.8	54 44 50	14 15 13	- 3 - 6 - 8	26 22 22	46 38 41	0.58 0.16 1.54 0.32	- 0.08 - 0.12	0.50 0.13 0.33 0.32 0.12	5.0 3.0 26.0 4.0 7.5	3 3 14 1 5	24 11 19 7	4 17 6 18	3 3 6 6	n. w. w.	R. W. Benedict. Great Western Sugar Co C. W. Barry. Norman W. Fry. H. L. Corbett.
reeley	Weld Park	4,649 5,076 8,892 6,000 3,745	21 8 3 3 16	26.4	- 4.2	59	14	- 3a	26	43	0.48	*******	0.39 0.09 0.51 0.13	1.2 4.8 12.5 3.5	3 2 5 2	18 13 24 23	10 11 3 3	3 7 4 5	nw. nw.	Nelson Reynolds. D. M. Porter. Emily Kleinknecht. B. E. Chesebro. A. C. Cauble.
daho Springsulesburg. Cerseyaporteeroy (near)	Clear Creek Sedgwick Weld Larimer Logan	7,543 3,465 4,571 5,053 4,380	12 21 23	25.4	- 3.5	50%	13	- 6	6	34a	0.20	+ 0.03 - 0.06	0.23 0.20 0.13 0.07	2.0 6.0 3.7	5 1 3 6	7 25 13	20 2	4 4	w. se.	J. J. Willis. Great Western Sugar Co Do. P. A. Taft. Chas. Green.
ongmontongs Peak (near)	Larimer	4,950 8,600	11 17	25.4	- 0.3 + 0.9	48	27	- 13 i	4	41	0.14 0.38	- 0.18	0.10 0.33	0.7	3 2	17	7	7	n.	Great Western Sugar Co Enos A. Mills. Great Western Sugar Co
Ioraine	Jefferson Larimer	7,775 5,492 7,750	22 13 9	*****	- 5.7		****	*****				- 0.22 + 0.20	0.33	9,2	3		9	1	SW.	Chas. A. Chapman. Denver Union Water Co Homer C. Pearson.
edgwickilver Lakepicer (near)	Boulder	8,700	2 2						****		0.16	*******	0.07	2.2		19	12	0	SW.	Edwin Lewis, M. D. F. R. Dungan. Frank W. Murphy. Great Western Sugar Co
terlingVaterdaleVrayvray	Yuma	3,892 5,206 3,512 4,138	3 9 16 21	30.8	+ 1.0	60	30 14 14				0.17	- 0.20 - 0.42	0.06 T. 0.09 0.05	2.5 0 2.5 1.5	1 0 3 1	21 18 19	9 11 8	2 4	nw.	Great Western Sugar Co. P. H. Boothroyd. J. C. Tuomey. Matthew Harr.
Nebraska.																				
insworth Jbion Jbion Jliance Jma readia readia rthen shland shton tkinson uburn	Boone. Boxbutte. Harian. Valley Wheeler. Saunders. Sherman Holt.	******	8 16 20 15 15 2 28 20 7 20	28.0° 25.0° 30.2° 32.6° 	+ 2.7 - 1.3 + 1.8 + 5.3	58 60 54 60 61 61 60 59	27 30 14 14 14 1	- 2 - 5 3	12	41 48 43 57	0.05 0.03 0.40 1.10 0.09 0.09 0.30	- 0.68 - 0.22	0. 25 0. 17 0. 05 0. 03 0. 40 1. 10 0. 07 0. 08 0. 30 0. 22	3.5 0.5 0.5 4.0 5.0 0.5 1.0 3.0	3 1 1 1 1 1 1 3 2 1 2	5 11 20 24 15 19 21 21 17 22	18 4 11 6 7 7 7 4 6 5	8 16 0 1 9 5 3 6 8	nw. nw. nw. nw. nw. nw. nw. nw.	John M. Cotton. F. M. Weitzel. J. A. Keegan. W. A. Sharpnack. J. L. Owen. A. E. Johns. Dr. A. S. von Mansfelde. F. Rein. C. J. Wilson.
Seatrice Seaver City Sellevue Senkelman Sertrai d	Gage	1,235 2,147 1,210 2,968 2,515 1,122	21 21 31 18 5 17	31.3 33.2 32.4 31.0	+ 4.3 + 2.7 + 2.6 + 6.9 + 5.3	59 63 55 	1 30 1†	3 7 4 2	12 6 12 	42	0.09 0.20 0.20 0.80 0.34 0.17	- 0.75 - 0.94 - 0.27 - 1.05 + 0.39 - 0.79	0. 22 0. 09 0. 20 0. 13 0. 40 0. 19 0. 12	0.5 0 2.0 0.4 0.5	1 1 3 3 3 2	22 20 22 20 18	5 6 4 8 8	4 5 5 3 5	nw. nw. nw. nw. se. nw. nw.	J. R. Hufman. H. E. Palmer. T. M. Davis. A. A. Tyler. R. D. Druliner. W. F. Dobbin. D. C. Van Deusen. H. C. Mead.

Table 1.—Climatological data for December, 1912. District No. 6—Continued.

			years.	Tem	perature	e, in	degr	ees Fal	arenh	neit.	Pre	cipitation	n, in in	ches.	days,		Sky.	direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days. N u m b e r o f	ailing wind tion.	Observers.
Nebraska—Continued.		-																	
Bloomfield Bradshaw	York	1,715	7 15			57	30	- 61	6	44 !	0.07	- 0.73	0.50	8.0	2 2	16 18	10 5 10 3	nw.	Dr. L. C. Bleick. E. C. Roggy.
Brewster	Blaine	3,658	16	28.2	+ 1.7	56	14	0	22	38	$0.12 \\ 0.45$	- 0.07	0.11	0.5	2 3	16 15	11 4	nw.	W. 8 Turnbull.
roken Bow	Morrill	3,658 2,477 1,583	18			61	13				0.12	- 0.30	0.12	1.5	1 2	26 20	8 3	w. nw.	R. b. Willis. R. V. McCall.
runingurge	Thayer	2,674	6			60	15	0	10†	43	0.25		0.25	2.5	1	10	14 7	nw.	Henry Middendorf. H. A. Davis.
urwellutte	Boyd	2,180	20	1		59	30	- 6	6	44	0. 20 0. 10	- 0.24	0.20	1.0	1	19	9 3	nw.	W. L. McMullen. W. Whitla.
airoallaway	Hall Custer	1,951 2,555	20	34.2	+ 6.5	61	14	2	6	48	0.36	+ 0.02	0.36	2.0 6.0	1	20	4 7	nw.	J. H. Evans.
ambridge	Furnas	2,258	6 20	31.4	+ 3.1	62 55	30	1	6	47 38b	0. 40 T.		0.40 T.	4.0	1 0	22 22	4 5	nw.	Chas, Jensen,
olumbus	Platte Saline Hitchcock	1,442 1,368	30	32.4	+ 4.5	60	29	2	8† 12	41	0.00	- 0.63 - 0.73	0.00	T.	0	20	4 7	sw. n.	A. L. Rush. Doane College.
ulbertsonurly	Hitchcock	2,565	26	31.4		64	29	4	6	45	0.60	+ 0.13	0.60	6.0	1	28	0 3	nw.	Homer L. Nye. A. E. Hann.
artis	FrontierButler.	2,553 1,619	15 24		+ 3.0 + 5.6	60 59	30 30	2 3	6 12	44 42	0.18 0.20	- 0.30	0.07 0.20	1.4	4	20 17	9 2 8 6	nw.	Dr. S. R. Razee. S. Clingman.
avid City u Bois	Pawnee	1,074	8								0.40	- 0.65	0.20	0. 2 T.	3	18	8 5	nw.	O. M. Backus.
umaslm Creek	Garfield	2,268	5	30.0		58	141	- 4	12	46	0.30		0.30	3.0	1	21	7 3	nw.	Emile Raes. E. L. Sutton.
lsie	Perkins	3,382 2,029	5 21								0.60		0.40	6.0	2	25	5 1		. J. F. Brittain.
ricson (near) wing	Holt	1,888	22	28.8		68	30	- 3	6†	56	0.30	- 0.07 - 0.37	0.50	6. 0 3. 0	1	20	5 1	nw.	
xeterairbury	Fillmore	1,607 1,316	37	33.7	+ 5.0	64	14	- 2	12	45	0.20	- 0.58	0.20	2.0 0.2	1 2	20	10 1	nw.	W. F. Cramb.
airmont	Fillmore	1,641	20 17	30.0	$+2.9 \\ +6.0$	61	30 28	- 4	12 12	46 40	0.05	- 0.64	0.05 0.22	0.8	1 2	17 22	6 8 7 2	nw.	C. B. & Q. R. R. Co. Dr. J. C. Yutzy.
alls City ort Robinson	Richardson Dawes	898 3,764	30	28.4	+ 1.0 + 2.1	61 56	14	5 2	26	41	$0.31 \\ 0.15$	- 0.49 - 0.52	0.15	T. 1.5	1	17	2 12	nw.	Post Surgeon.
anklinemont	Franklin Dodge	1,820 1,203	22 32 12	31.2	$+2.1 \\ +4.8$	64 59	30	4 2 2 - 2	12† 12	55 47	T. 0. 10	- 0.55 - 0.91	T. 0.10	T. 1.0	0	17	8 6	nw.	A. R. Peck. Ernest Hahn.
illerton	Nance	1,629 1,633	12 23	30.0		55	31	2	12 12	47a 40	T. 0.10	- 0.90	T. 0.08	T.	0 2	18 18	9 4	nw.	Dr. F. W. Johnson.
enevaenoa	Fillmore	1,584	37	32.2	+4.3 + 7.2	58 61	30	3	12	39	0.35	-0.69 -0.50	0.35	1.0	1	21	9 4 5 5	nw.	F. M. Flory. F. W. Parsons.
ordonosper	SheridanGosper	3, 550	10	27.44		59	14	- 1	26	46 f	0.20	- 0.47 - 0.36	0.20	2.0	1 2	21	6 4	nw.	G. F. Williams. E. H. Stoll.
thenburg	Dawson	2,557	19	35.1	$+6.2 \\ +4.3$	68 62	11 30	5 8	6†	49	0.45	- 0.04	0.40	4.0	2 1	17 20	7 7 5 6	nw.	Dr. W. J. Bartholomew
and Islandant.	Hall Perkins	1,860 3,405	16	29.8		57	13†	3	6 22	35 43	0.16	- 0.50	0.15	0. 5 3. 0	2 3	19	8 4	nw.	E. A. Barnes. Anson K. Holmes.
eeleyde Rock	Greeley	2,021 1,646	18	31.6		54	14†	8	2	32	0. 34 T.	- 0.34 - 0.64	0.30 T.	3.4	3	24 17	6 1 10 4	nw.	W. E. Morgan. J. S. Marsh.
aigler	Dundy	3,258	19			01	14			90	0.20	- 0.12	0.20	T.	1 2				. J. L. Pember.
alseyartington	Thomas. Cedar.	2,695 1,309	10 21	30. 4	$^{+\ 2.6}_{+\ 6.8}$	61 59	14 29	- 5	6	38 53	0.10	- 0.59 - 0.58	0.05	2.0 4.0	1	17 14	8 6 12 5	nw.	U. S. Forest Service. D. E. Ewing.
arvardastings	Clay	1,812 1,932	22 23	32.0	+5.2 + 4.8	61 61	31 30	5	12 12	43	0. 11 T.	- 0.53 - 0.64	0.06 T.	5.0	3	14 27	7 10 2	nw.	Bert Gregg. C., B. & Q. R. R. Co.
ayes Center	Hayes		19	31.6		60	30	5	6	42	1.00	+ 0.41	0.50	10.0	3			nw.	C. A. Ready.
ay Springsebron	Sheridan Thayer	3,821 1,458	25 27	33.2	+ 2.8 + 3.7	55 63	14 30	3 2	22 12	43 46	0. 20 0. 02	- 0.52 - 0.63	0.10	2.0 T.	3	16	11 4	nw.	A. Kadlecek. Dr. C. M. Easton.
ebronemingford	Boxbutte	4, 256 2, 231	9								0.15		0.04	3.0	5				
ershey	Lincoln	2,902 3,484	2								0.13		0.10	1.8	3	23	0 8		. G. F. Palmer.
illsideoldrege	McPherson	2,324	22		+ 1.6	64 58	14	10	22 6†	53 43	$0.05 \\ 0.02$	- 0.52	0.04	0.8	1	16 20	9 2	nw.	Mrs. M. R. Lloyd. C., B. & Q. R. R. Co.
ooperull (near)	Dodge Banner	1,228	15	28.8	+ 4.2	58	1†	- 1	12	47	T. 0.15	- 0.78	T. 0.10	T. 5.0	0 2	19 16	1 11 14	nw.	Dr. W. H. Heine. Mrs. W. P. Miller.
nperial	Chase	3,278	22	30.0	+ 1.3	57	14	2	22	43	0.21	- 0.38	0.10	4.5	3	13 19	8 10	nw.	Robt. Malcolm.
earneyimball	Buffalo Kimball	2,146 4,697	24 24	27.3	+ 3.3 - 2.6	60	24†	- 8	25	47	0. 10 0. 35	- 0.38 - 0.19	0.10 0.20	3.0	3	20	9 2	W. W.	City Engineer. F. J. Bellows.
irkwoodowanda	Rock		18	29. 9	+ 5.0	62	14	- 8	6	53	0. 20 T.	- 0.48	0. 20 T.	2.0 T.	1 0	16	7 8	nw.	Mrs. C. Arter. Geo. W. Hulse.
xington	Dawson	2,385 1,189	24 31	31. 9.	+ 3.6	65	5 30	6	22 12	47	0.30 0.02	- 0.34 - 0.65	0.30	3.0 0.1	1 2 1	27 17	0 4 9 5	sw. nw.	Robt. Chadwick. U. S. Weather Bureau.
ncoln	Cheyenne	3.820	14	30. 2	+ 6.2 + 2.2 + 3.0	61 58	14	6 6	6†	47 39 37	0.30	- 0.18	0.30	3.0	1	19	7 5	W.	R. T. Kidney.
Cook	Sherman Redwillow	2,067 2,506 1,575	18 18	29. 4 30. 6	+3.0 + 1.9	59 57	30 24†	- 3	6	48	0.11 T.	- 0.36 - 0.43	0. 11 T.	3.0 T.	0	25 24	5 1- 3 4	nw.	Harriet Hayhurst. C. G. Coglizer.
Cool Junction	York. Madison	1,575 1,585	15 21		+ 3.5	58	30†	2	8	36b	T. T. 0.30	- 0.75 - 0.51	T. 0.30	T. 3.0	0	16	10 5	nw.	. L. L. Slagel. Dr. F. A. Long.
arquette	Hamilton	1,830	33		T 0.0						0.15	- 0.51	0.10	1.5	2				. John Ellis.
aryson City	BrownCuster	2,257	13								0.40	- 0.28	0.20	3.5	4	20	5 6	nw.	G. C. Stufft. J. A. Amsberry.
natarenden	Custer Scotts Bluff	2,257 3,825 2,169 3,950	3 35	32.6	+ 4.7	61	30	9	6	42	$0.70 \\ 0.22$	- 0.48	0.30 0.16	7.0	3 3	22 17	5 4 11 3	NW.	A. Kennedy. Joel Hull.
tchellbraska City	Kearney. Scotts Bluff	3,950	4	27.3		61	14	- 3	221	48	0.02		0.02	0.5	1	7	12 12	W.	U. S. Reclamation Service
ISOn	Otoe Nuckolls	941 1,683	34	33.7	+ 6.2	56 64	28 30	3 9	12 8	41 46	0. 20 T.	- 0.66	0. 20 T.	T.	0	20 23 19	7 4 6	n. w.	C., B. & Q. R. R. Co. Mack I. Koser.
rfolk rth Loup	Madison	1,532 1,961	26 25	29.4	+ 5.3 + 4.0	60	30 14	1	61	47	0.20	- 0.58 - 0.38	0.20	2.0	1	19 19	2 6 8 4 9 3	nw.	Dr. P. H. Salter. W. G. Rood.
rin Flatte	Valley	2,841	39	29.7	+ 3.1	60	14	5	6	48	0.18	- 0.29	0.12	2.0		16	8 7	w.	U. S. Weather Bureau.
kdale	Antelope Douglas	2,841 1,722 1,103	25 39 25 41	27.4 32.8	+ 2.8 + 5.7	58 56	30	- 3 - 3 7	8	49 48 46 37	0.43	- 0.28 - 0.59	0.37	4.0 0.4	3 5 2	14 16	10 7 8 7	nw.	G. S. Clingman. U. S. Weather Bureau.
Neilld	Holt. Valley	1,975	14 18					•••••	• • • •		0.69	0.00 - 0.57	0.41	4.0	2	21 13	2 8	nw.	L. E. Best. Jas. Milford.
leans	Harlan	2,062 1,993	5								0.00		0.00	0	0				. Jas. McGeachin.
ceola	Polk. Hitchcock	1,644	10	32.4		58	24†	4	12	38	T. 0. 12	- 0.52	T. 0.09	T. 4.0	0 2	19	8 4	nw.	G. T. Ray. E. E. Young.
disadedmyra **wnee City	Otoe Pawnee	1,142 1,175	3 17 17	32.1	+ 4.7 + 3.7	60 58 57	14	6	12 12	37	0.10 0.30	- 0.65 - 0.58	0.10 0.27	Т.	1 2 2	20 24	8 3 6	n. nw.	Thos. Coles. F. A. Barton.
хсоп	Keith	3,060	3	29.3		57	30	0	22 12	40	0.25		0.20	2.5	2	23	2 6	BW.	C. F. Coy.
ymouth	Jefferson	1,419	3 9 11	31.7	+ 3.3	62 62 61	14	0	12 6†	52	0.00	- 0.63	0.00	1.7	0	20 21	5 6 5	nw.	John Ruppel. T. C. Jackson.
vennad Cloud	Buffalo Webster	2,028 1,687	35 20 18 18	31.0	+ 2.8 + 4.1	61	30 30	6 2 0 0 0 3 3	6 12	50 52 47 49	0.18	- 0.63 - 0.47 - 0.57 - 0.46 - 0.38 - 0.48	0.16	3.0 0.2	2	17	9 5	nw.	H. G. Smith. Chas. S. Ludlow.
. Libory	Howard	1,887	18								0.25	- 0.48	0.20	2.5	1 1	20 23	4 7	nw.	W. I. Meader.
. Paul	Knox.	1,796	18	30.8	+ 2.7 + 7.5	60 59	30 30	- 2	6	45 51b	0. 13	- 0.38	0.13	2.2	1	19	5 7	nw.	Paul Anderson. Geo. MacGregor.

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TABLE 1.—Climatological data for December, 1912. District No. 6-Continued

			year	Temp	erature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in inc		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	r of pe	cloudy days.	Prevailing wind tion.	Observers.
Nebraska-Continued.																				
chuyler	Colfax	1,357 3,888	20 24	29.6 30.3	+ 0.9	61 58	30 14	- 1	12 22 12	53 41	0.23	- 0.59 - 0.34	0.23	0.5	1 4	13 21	10 8	8 2	nw.	R. O. Brownell. A. B. McCoskey.
seward	Seward	1,435	22	30.6	+ 2.5	61	30	0		50	T.	- 0.75	T.	T.	7	27 23	6	2 2		John P. Fischer.
idney	Cheyenne	4,090 1,052	20			****	****	- * * * * *			0.52	+ 0.18	0.20	5.0 T.	3	23	2	6	nw.	L. A. Bates.
pringfield	Keyapaha	2,000	19	31.2	+ 4.2	60	12	2	12	58	0.20	- 0.51	0.20	2.0	1	17	6	8	nw.	C. L. Phelps.
tanton	Stanton	1,472	21		+ 3.9	63	4			42	0.10 T.	- 0.76 - 0.41	0.10 T.	1.0 T.	1 0	22	6	3	nw.	Alfred Pont. Miss Stella Vennum.
trattonuperior		2,804 1,574	15 29				****				0.00	- 0.56	0.00	0	0					F. V. Bishop.
yracuse		1,059	20		+ 4.3	57	14	0	12	43	0.20	- 0.92	0.20	T.	1	20	6	5	nw.	W. N. Hunter.
able Rock		1,023	24 32				****			****	0.36	- 0.56 - 0.56	$0.27 \\ 0.30$	T.	2	24 18	3 7	6	nw.	E. D. Howe. L. E. Pratt.
ekamah		1,060	21	31.1	+ 5.1	59	1	3	12	44	0.26	- 0.81	0.22	T.	2	19	7	5	nw.	Dr. A. D. Neshit.
Iniversity Farm	Lancaster	2,613	23 24		+ 4.8		14		12 6	45 45	$0.02 \\ 0.24$	- 0.80 - 0.38	0.02	0.2	6	18 13	8	5	w.	S. W. Perin. U. S. Weather Bureau.
Valentine	Cherry	1, 187	10		+ 3.5	00	1.2			20	0.00	- 0.90	0.00	0	0	27	4	0	SW.	W. T. Mauck.
Wakefield	Dixon	1,387	19	29.5	+ 6.0				6	46	0.37	- 0.48	0.37	2.0	1	17	10	4	nw.	I. H. Weaver.
Walthill Watertown	Thurston	2,299	7							****	0. 15		0. 15	3.0	1	12	17	2	n.	E. W. Rossiter. R. E. Swift.
Vauneta	Chase	2,935			******															. C. D. Fuller.
Weeping Water	Cass	1,080	35	31.2	1 6 0	57	17		12 22	46 45°	0.25	- 0.68 - 0.87	0.19	0.5	3	18 24	8	5	nw.	S. W. Orton. J. C. Elliott.
Westpoint Wisner	do	1,313 1,380	27 16		+ 6.9		3				0.28	- 0.75	0.28		1					. F. C. Evans.
ork		1,633	23	32.4	+ 4.3	61	30	- 1	12	46	0.10	- 0.60	0.05	1.0	2	20	8	3	nw.	A. T. Giauque.
Iowa.																				
	Union	1,212	18	31.7	+ 6.0	55	1	4	12	37	0.56	- 0.68	0.35	0	3	17	6	8	sw.	N. W. Rowell.
Afton			10		+ 5.9	58	28	3	12	37	1.05	- 0.12	1.05	0.5	1	20	3	8	S.	Maude Chase.
Iton	Sioux	1,305	7	26.0	******	56	1	- 3	6	38	0.41		0.30	4.0	3	20 13	5 7	6	SW.	W. S. Slagle.
tlantic		1, 164 1, 301	21 18	29.8	+ 4.9 + 5.6	54 53	25	2 2	12 12	36	0.30	- 0.79 - 0.76	0.22	2.0	5 4	18	8	5	SW.	Thos. H. Whitney. Geo. E. Kellogg.
Bedford			12	30.8	+ 5.1	56	28	- 2	12	44	0.67	- 0.27	0.35	1.0	2	22	2	7	nw.	E. E. Healy.
enterville	Appanoose		17	32.9	+ 4.9	59	5 5	- 1	12 12	36	0.17	+ 0.06	0.17 1.30	1.0	1 2	29	2 1 7	7	SW.	Gordon Peacock, jr. C. C. Burr.
hariton	Lucas Page	1,042	22	23.6	+ 2.0	57 57	141		13	49		- 0.78	0.34	1.0	1	21	4	6	nw.	A. S. Van Sandt.
orning	Adams	1, 117	20	28.2	+ 1.1	52	11		12	37	0.60	- 0.54	0.45	1.0	2 2	22	2 7	77	SW.	Jerome Smith. May C. Miller.
orydon ouncil Bluffs			19	28.2	+ 5.6	58 54k	5 15	- 31	12	441	1.44	- 0.20	1.22	1.5						. B. W. Crossley.
reston	Union	1,312	7				23	0	12	40	0.44		0.30	T.	2	14	4	13	SW.	O. J. Colby.
umberland		1 180	13	90.5	+ 6.0	57	28	0	12	38		- 0.89 - 0.07	0.13	T.	1 2	21 19	5 7	5	sw.	J. H. Reppert. W. C. Van Ness.
Denison Elliott			7	29.0	7 0.0	57	28	1	12	39	0.19		0. 15	T.	2	17	9	5	SW.	C. H. Westrope.
reenfield	Adair		20	30.6	+ 5.6	56 53	28	1 0	12 12	35	0.59	- 0.66 - 0.52	0.34	0.5 T.	3	16	10	5	sw.	R. B. Oldham. C. A. Reynolds.
Tarlannwood			13	25.4	+ 5.2		14		6	46	0.39		0.30	5.0	2	20	6	5	nw.	F. B. Hanson.
ake Park	Diekinson	1,479		26.3		54	1	- 6	7	49	0.10		0.10	1.0		22 22	5	4	S.	A. E. Woodruff. T. J. Fitzpatrick.
amoni		1,120 1,266	22	30.8		55	5	3	12	35	0.42	******	0.30	1.0	3	22	0	9	nw.	R. C. Carnahan.
e Mars	Plymouth	1,224	16	28.1	+ 4.7	53	1	- 1	6	39	0.34	- 0.48	0.32	2.5		14	9	8	nw.	G. A. C. Clarke.
Lenox	Taylor	1,250	17	30.8	+5.5 + 4.9	54 56	28		12 12	38	0.35		0.25	1.0		23 16	1 5	7 10	nw.	J. L. Hurley. Morris Gardner.
Little Sioux			7	30.8		. 56	1		12	43	0.40		0.20	0.7	3	20	2	9	nw.	Geo. H. Gibson.
logan	do	928	45 19	31.2		57 55	28	1 2	12 12	40 38	0.34		0.19	2.0	3 2	16		5		Glenn H. Stern. Alex Maxwell.
Mount Ayr	Clarke	1,230			+ 5.8	57	28	1	12	35	0.42		0.31	2.0	. 3	16	9	6	nw.	N. T. Ashley.
Northboro	. Page						28	1 2		39	0.30		0.30	0.5		21 17	6	8		J. M. Darby. E. Starner.
Odebolt	Monone	1.051	12		+6.0 + 5.4	55 55	2				0.65	+0.10 -0.26	0.56			21	6	4		C. G. Perkins.
Pacific Junction	Mills	960	13	29.8	+ 3.5	54	1	0	12	42	0.16	- 0.66	0.13	T.	2	12	16	3	S.	H. H. McCartney.
Rock Rapids	Lyon	1,358	13	21.6		45 55	14		12		0.20	- 0.39	0.20			17		10		W. C. Wyckoff. Geo, Aupperle.
Sheldon	. Osceola	1,212	19	24.3	+ 4.7	54	1	- 6	6	47	0.51	- 0.27	0.36	2.0	3	10	15	6	nw.	H. G. Doolittle.
Sioux Center	. Sioux		. 13		+ 4.6		1		8	37 35	0.35		0.20			15		6		J. de Ruyter. U. S. Weather Bureau
Sioux City	. Clay		. 2	29.2	+ 6.6								0.30							S. Gillespie. C. R. Paul.
Thurman	. Fremont		. 15	30.4		55	1			40 38	0.29	- 1.10 - 0.57	0.17	T. 0.5	2 2	14		6	nw.	C. R. Paul. H. L. Felter.
Washta	. Cherokee	1, 157	14	27.8	+ 3.9	52	1	1 3	12	33	0.28	- 0.57	0.16	0. 3	2	22	0	0	3.	21. 20. 2 0.001
A bilene	Dickinson	1,157									0.34	- 0.53	0.34	T.	1	18		5		T. W. Sherman. Prof. J. O. Hamilton.
Agricultural College	. Riley	1,100 1,651	54 10		+ 4.2		30		12 21		0. 41 T	- 0.43 - 0.53	0.35 T.	T.	3			3	w. nw.	H. A. Storer.
Alton Atchison	. Atchison	973	21	36.4	+ 5.3	69	1	8	12	34	0.51	- 0.53 - 1.06	0.51	0	1	24	2	5	nw.	Prof. E. M. Stahl.
Beloit	. Mitchell	1,383 2,894	17 15	33.3		65	14				0.01	- 0.49 - 0.09	0.01					6	nw.	F. A. Slack. C. L. Henderson.
Blakeman Blue Rapids	Rawlins		6								. 0.13		. 0.13	0	1	21	1	9		M. Norton.
Centralia	. Nemaha	1,256	3			. 61	13	0	12	36	0.31		0.30		2	25	1	5	SW.	N. S. Hazen. E. F. Halbert.
Chapman	Dickinson	1,113 1,203	8	34.7		0.00	i	6	12	44	0.42	- 0.33	0.30	T.	2	19	4	8	8.	O. L. Slade.
Colby	. Thomas	3,138	21	33.5	+ 3.4	63	14	6	5	45	0.20	- 0.16	0.10	1.5	4	18	a 10a	2	a nw.	G. H. Kinkel.
Concordia	. Cloud	1,398	28	35.6	+ 5.9	60	114	10			0.12	- 0.36	0.12		1	15		6 9	sw.	U. S. Weather Bureau Miss Irene Vaughn.
Densmore Dresden		2,200 2,731	18	32.6	+ 1.5	64	14	† 5	20	45	0.17	- 0.27	0.06	0.5	4		5	5	nw.	Jacob Bock.
Ellsworth	. Ellsworth	1,537	8				14	3			0.12		. 0.12	T.	1	13	15	3	S.	Geo. Seitz.
Emmett Enterprise		1,024 1,144	10	35.7		. 59	29	11	12	1 39	0.36	- 0.47	0.36			23	a Oa	5	w.	Frank Zina. Karl G. Erick.
Eskridge	. Wabaunsee	1,412	6	34.8		. 58	28	10	12	32	0.53		. 0.53	0	1	22	5 5	4	S.	Geo. D. West.
Farnsworth	. Lane	2,850	11	33.9	+ 2.6	67	14	† 5	21	55	T.	- 0.50 - 1.14	T. 0.50	T.	0 2	30	5	1 1		C. M. Jennison. E. A. Shaver.
Fort Scott		857 1,146	37 18	33.7	+ 2.3 + 3.0	66 65	14		12	43	T.	- 0.92	T.	T.	0	15	8	5	SW.	W. W. Watson.
Garnett	. Anderson	950	6					. 10	9	t	1.01		. 0.78	0	3	18	8	5	8.	D. D. Judy.
Goodland	. Sherman	3,687 1,225	5				1			42	0.55 T.		0. 20 T.	5.0 T.	4	17	8 5 3 5	5 5	n.	C. C. Calvert. A. Jaedicke, jr.
Hanover	Washington	1,804	15	01.0	+ 5.3				1 24	49	T.	- 0.55		T.	0	21	0	3	n.	Mahlon Tegley.

Table 1.—Climatological data for December, 1912. District No. 6—Continued.

			ears	Temp	perature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,	1	Sky.		direc	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	cloudy days.	Prevailing wind tion.	Observers.
Kansas—Continued.																				
ays. iil City. orton. oxie awrence avenworth banon. boti incoln indsborg cCracken inneapolis oran atoma orton berlin keto lathe ttawa hillipsburg lainville leasanton uenemo epublic ussell ussell sussell Springs Francis	Ellis. Graham Brown Sheridan Douglas. Leavenworth Smith Wiehita. Lincoln Mc Pherson. Rush Ottawa Allen Osborne Norton Decatur Marshall Johnson Franklin Phillips Rooks Linn Osage Republic Russell Logan Cheyenne Saline. Scott	2,000 2,134 1,188 2,700 997 913 3,300 1,374 2,139 1,098 1,098 1,098 2,284 2,539 1,194 2,284 2,539 1,939 2,156 1,939 2,158 3,284 1,495 1,49	44 4 4 23 13 44 68 14 9 6 22 16 3 14 25 4 17 18 21 6 10 9 13 2 4 4 28 6 6	35. 2 34. 0 35. 5 36. 6 35. 5 36. 6 33. 5 34. 0 31. 6 33. 5 35. 1 36. 5 33. 4 34. 0 31. 6	+ 3.4 + 4.2 + 4.1 + 3.1 + 2.9 + 3.3	66 65 60 65 58 60 63 63 65 65 65 65 65 65 65 68	14† 14 28 14 5 5 30 13† 14 1 30 14† 1 15 13 14 14 15 15 13†	10 11 5 10 10 8 8 9 12 10 2 6 6 10 9 11 11	12† 21† 12 6† 12 12 12 12 12 12 12 12 12 12 12 12 12	48 44 38 53 38 48 47 50 48 51 44 36 49 49 47 46 32 47 43 33 37 46 32 53 48 48 48 48 48 48 48 48 48 48 48 48 48	T. 0.82 T. 0.52 0.23 T. T. 0.46 T. 0.80 T. 0.18 0.21 0.98 0.48 T. 0.98 0.48 T. 0.98 0.48 T. 0.25 0.58	- 0.38 - 0.07 - 0.50 - 0.85 - 1.15 - 0.51 - 0.55 - 1.12 - 0.30 - 0.13 - 0.37 - 0.39 - 0.59 - 0.51	0.02 T. 0.45 T. 0.45 T. 0.40 T. T. 0.46 T. 0.10 0.20 T. T. 0.10 0.20 T. T. 0.10 0.20 T. T. 0.10 0.20 T. 0.10 0.20 T. 0.10 0.20 T. 0.20 0.20 0.20 0.20 0.20 0.20	T. T	2 0 2 2 3 0 0 0 0 1 1 3 3 0 0 1 1 0 0 2 2 2 0 0 0 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 1 1 0 1 1 0 1	19 18 17 16 20 21 28 21 21 18 18a 20 10b 18 21 24 26 23 21 24 26 27 28 29 18 21 21 21 21 21 21 21 21 21 21 21 21 21	12 10 8 13 6 2 0 8 5 1 1 9a 4 4 1 1 13 6 14b 7 4 4 4 5 1 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6	0 3 6 2 5 8 3 2 5 5 5 6 6 7 1 0 7 6 6 7 6 7 6 6 7 6 6 7 6 7 6 6 7 6 7	nw. nw. nw. nw. nw. sw. se. n. nw. ss. nw. sw. sw. sw. sw. sw. sw. sw. sw. sw. s	G. K. Helder. C. A. G. Inlow. Mrs. S. C. Belden. I. L. Vinson. Prof. H. P. Cady. Dr. A. F. Yohe. E. V. Bower. L. E. Gorsuch. R. W. Greene. A. J. Fredrickson. E. D. Floyd. J. L. Steele. C. J. Norton. C. O. Hunt. Sim Sleffel. I. K. Huber. J. A. Church. Dr. S. B. S. Wilson. W. J. Sheldon. N. E. Bailey. P. D. Spellman. B. F. Blaker. R. L. Graham. J. W. Ambrose. Robert Brebner. Murray Wallace. J. E. Uplinger. Prof. A. W. Jones. J. B. Loughran. W. H. Nelson.
mith Center oppeka . ribune . alley Falls . injand . akeeney . allaoe . /amego . Missouri .	Jefferson	1,800 997 3,612 913 880 2,456 3,303 1,002	2 26 13 13 3 29 42 19	36. 2 30. 8 33. 6	+ 5.1 + 2.6 + 3.7	66 60 61 58 67 62	30 28 13† 28 30	11 9	12 6† 12 12 12	36 43 39 50	0.32	- 0.56 - 0.38 - 0.10 - 0.58 - 0.69	0. 31 T. 0. 65 0. 58 T.	T. T. T. T. T. T.	0 1 2 0	22 18 14 23 27	9 6 4 2 7	4 11 4 2 5	sw. nw. nw.	U. S. Weather Bureau Charles E. Cassel. Miss Nettie Maxwell. A. Schick. A. S. Peacock. M. T. Griggs. M. L. Stone.
moret ppleton City rthur valon ethany olivar oonville runswick linton olumbia rocker ldon ldorado Springs avette ulton lasgow rant City larrisonville arzelhurst erman louston efferson City cansas City cansas City cidder amonte ebanon	St. Clair. Vernon . Livingston . Harrison . Polk . Cooper . Chariton . Henry . Boone . Pulaski . Miller . Cedar . Howard . Worth . Cass . Livingston . Gasconade . Texas . Cole . Jackson . Caldwell . Pettls . Laclede .	912 482 1,280 628 963 1,017 863 1,265		39. 0 38. 0 37. 9 35. 3 32. 8 34. 0 36. 0 33. 6 36. 5 36. 5 38. 0	+ 3.2 + 3.9 + 2.0 + 2.2 + 2.9 + 2.6 + 2.8 + 0.4 + 5.2 + 5.4 + 2.6	58 60 62 66 59 59 63 65	5 141 28 5 5 4 1 1 5 5 1 5 5 5 5 5 5 5 5 5 5 5 5	9 11 9 9 9 9 9 9 8 8 2 9 12 7 6 6 12 7 6	12 8 12 12 12 12 12 12 12 12 12 12 19	39 38 31 35 36 39 38 44 38 45 46 30	0. 47 0. 65 0. 64 0. 78 0. 40 0. 19 0. 36 0. 51 1. 06 0. 70 0. 97 0. 60 0. 23 0. 40 0. 39 0. 67 0. 82 0. 35	- 0.56 - 0.91 - 1.00 - 1.68 - 1.81 - 1.55 - 0.69 - 0.68 - 1.49 - 2.66	0. 42 0. 35 0. 48 0. 21 0. 19 0. 26 0. 45 0. 60 0. 50 0. 18 0. 30 0. 15	0 0 0 0 0 0 T. 0 0 T. 0 0 T. 0 0 0 0 0 0	33 22 33 33 24 41 22 22 44 11 33 22 55 33 11 12 22	19 ¹ 21 17 17 12 18 22 18 18 ¹ 21 11 18 21 11 17 14 21 17 21 21 21 21 21 21 21 21 21 21 21 21 21	7 2b 5		DW. SW. SW. SW. SW. SW. SW. SW. SW. SW. S	Darby Fruit Farm. Robert Brown. J. T. Armstrong. F. G. Ashbaugh. W. H. Skinner. A. C. Fink. C. Randecker. Louis Benecke. A. E. Derwent, M. D. U. S. Weather Bureau Ira H. Stephens. Charles A. Kellogg. Samuel Graham. Prof. T. B. Smith. Russell Johnston. J. J. Shaughnessy. W. H. Campbell. A. J. Sharp. W. H. Baker. C. T. Maushund. E. Dempsey. Wiss Emma Swift. U. S. Weather Bureau J. F. Sharp. J. Ed. Hall. M. W. Serl. J. W. Keithley.
exington dierty dockwood farshall faryville fount Vernon evada oregon Pattonsburg tolla tt. Charles tt. Joseph tt. Louis (1) tt. Louis (2) ublett 'arkio renton Unionville Varrensburg Varrenton Varsaw Vheatland	Lafayette Clay Dade Saline. Nodaway Lawrence Vernon Holt Daviess Phelps St. Charles Buchanan St. Louis City do Adair Atchison Grundy Putnam Johnson Warren Benton	813 864 1,088 779 1,160 1,480 860 1,113 1,139 614 967 567 578 1,000	23 35 19 58 32 35 41 42 1 33 1 18 20 35 23 9	36. 2 35. 6 30. 7 37. 6 38. 0 38. 1 34. 6 37. 5 33. 1 36. 0 33. 8 30. 4 37. 4 38. 6	+ 4.9 + 4.6 + 0.8 + 6.0 + 3.3 + 3.1 + 4.2 + 4.3 + 2.9 + 3.7 + 2.2	58 65 65 60 59 67 58 66 65 61 67 56 58 63	28 5 1 1 5 28 5 5 15 5 5 5 5 5 5 5 5	8 7 4 12 6 9 10 8 12 12 3 3 3 8 4 4 9 8	12 9 12 9 12 12 12 12 12 12 12 12 12 12 12 12 12	33 45 33 34 39 39 33 34 46 34 42 32 41	0. 86 0. 07 0. 40 0. 38 0. 61 0. 30 0. 52 0. 42 0. 42 0. 33 0. 87 0. 53 0. 76 0. 48	- 0.79 - 2.30 - 1.41 - 1.11 - 1.17 - 2.23 - 1.78 - 0.51 - 1.81 - 1.70 - 0.69 - 1.16 - 1.10 - 1.78	0.40 0.28 0.45 0.43 0.20 0.20 0.21 0.22 0.24 0.86 0.36 0.30 0.30 0.30 0.30 0.30 0.30 0.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	1 2 2 1 1 3 2 2 2 1 3 3 2 2 2 1 3 3 3 4 5 5 6 6 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	23 12 25 200 21 199 200 166 161 124 153 232 232 133 188	2 1 m 3 3 5 6 6 4 14 2 6 6 5 4 9 11	65 5 6 6 7 7 7 5 9 9 111 6 6 5 5 10 3 5 5 9 9	nw. nw. sw. sw. sw. nw. sw. sw. s. nw. sw. sw. nw. sw. nw. sw. sw. sw. sw. sw. sw. sw. sw. sw. s	J. W. Keithley. W. C. Wilmott. C. S. Crow. Prof. W. H. Black. J. R. Brink. J. R. White & Son. C. Jewell. Tom Curry. Wm. Burton. Prof. P. J. Wilkins. L. C. Saeger. U. S. Weather Bureat Do. St. Louis University. Lowis Spriggs. Prof. M. H. Rees. W. H. Estes. Geo. W. Davis. A. F. Smithson. Prof. J. H. Frick. J. R. Smith, M. D. Mrs. S. A. Jackson.

^{*,} b, e, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

†Also on other dates.

†All temperature normals for Montana used in this table have been reduced to the 33-year period.

T. Precipitation is less than 0,01 inch rain or melted snow.

Lable 2.—Daily precipitation for December, 1912. District No. 6, Missouri Valley

															D	ay o	of mon	nth.															-
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	2 2	23	24	25	26	27	28	29	30	31	Total.
Wyoming.																							-	-									
apahoe I	Bighorn																																0.
argum I	owder																			***													0.
asin I	Bighorn						***		***		***								***	***										****	****		U.
	North Platte .					02	***	T	***	****	06		***										T.						. 20			. 20	0.
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sper	North Platte .																									10	T.			****	***		
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	outh Platte	T.			. 10						. 10							. 01			1.	1.				. 22			. 02	****			0
	North Platte	03			. 10	200									T.			*	T.											Т.	T. T.	T.	0
		. 00				. 02					. 05								. 02														0
	Yellowstone																															****	i
ome Lake	Fongue	.30		. 15	CEN	. 15					. 15				. 08			. 15	. 08	. 15	****	. 08		. 08						. 00	T	****	0
	North Platte Bighorn		- * * *		dr.						T					T.		. 00	T		****	T.	****		T.			1	T.		. 05		0
ubois	Tongue				.10	****		.01			.20							. 20															0
cheta	Powder							T.	T.	T.	T.	T.					T.	T.												****		****	1
k Mountain	North Platte	. 22		****	.48					****								. 2-		m	· · · · ·	T.				. 11			T.	. 19	. 20	40	1
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	Powder													****	****		****	1.								****	****	1					1
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illette	Powder				. 02				****			. 05									****												1
orse Creek	Bighorn					T.											****			T.	****		****										1
	Powder Bighorn					Т.													****	1.		****											1.
	Niobrara																. 07	T.		. 20											10		-
irtlev	do											****																					-
irwin	Bighorn		. 08		.45			. 04			. 22				. 30		.06	7	. 45		. 22		****	T.		T				***	T		1
	Cheyenne	T.	****	****	10	T.		T.	. 11	T.	.08	****		****			.00	1.	****		****	****	. 12							1000	3 T.	. 04	
	North Platte Bighorn				18	. 13	****	T		****										. 00	****	T.	****								08	3	
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loore	North Platte	. 05			. 01	. 02		T.			. 12							.01	T.	T.											. 0	2	
lewcastle	Cheyenne				T.		. 25	1.10							T.		. 05			. 20		02									1.0	4	
	North Platte South Platte				, UO	.16												****	T.	****						.1	4			T.		18	8
	Chevenne					. 02	. 02			1						. 06				T.													
'owell	Bighorn																****												·				
	North Platte				. 15			T.			. 03							T.				T.	T.			1.00	3		T.		3	9 . 10	0
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	Bighorn Powder				.01		T	10							T.		. 10	T.		T.		T.	T.			T					. T		
	North Platte										. 08																5					::	
even Mile Creek	do	***									, 10						. 09 i T.	. 15				T.	T.									1 . 10	
heridan	Tongue					T.			***		. 16	. 01			Τ.	.0.	T.	T.	. 01	. 01		1.	1.			1							
hoshone Dam oldiers Home	Bighorn								****									1000		1													
outh Pass City	North Platte			1	. 06	T.		T.			T.						04		T.	. 11					T.							9 . 3	
undance	Cheyenne	***				. 10	. 20	1.16	. 16				***					. 16		. 26	.0	7	***								0	7	
	Bighorn										. 01										***												1
hornton	Cheyenne Tongue	- CEN			. 03	T	****	T	***			. 12				T	T.		T.	T.	0	3									T	1	
rerona	.do				1			T.			. 11								T.	T.	T.	1											-
Vheatland	North Platte	***				. 05					. 10	07								T.	. 1	2										. T.	
Viants Ranch	do	.2	0		. 25						. 10						. T.					- m	T.			0	3		. T.		T	-	-
Voodrock	Tongue	. 1	8	T.	. 50	. 10	. 20	. 67	. 12		. 2			***	Т.			. 28													(2	
Worland Wyncote Yellowstone Park	North Platte			****	T		***				T.	1		1	1000	1111		T.													. T	. T.	
Tellowstone Park	Yellowstone	T.	. 09	. 0	5 . 09	. 01	. 01	1 .00	3		. 0	T.		T.	. 14	T.	. 03	. 04	. 09	.04	1		. 0	2 .0	1				. 0	1 .3	36 . 1	8 .1	9
Yellowstone Park Fairview Dome Fountain	do		. 24				***	. 07									07	. 30				09		. 0	0.0	4 . 1		(12		15 .2	2 .1	U
ountain	Madison		0 00		. 60		***					****	****		. 40	0	7 .50	9	20											1 3	36	. 1	8
rand Canyon	Vellowstone	0	8 04	0.00	3 T	T	0	T	***		. 0	T	T.	16	6	0	8 . 16	. 16	. 24	T.	T		1	T.	T.	T	. T		. T	(55 T	1	18
ake Yellowstone	do	.3	5 .40	3	0												63	3							3	2					5	0 .3	5
Lake Yellowstone	Madison	.0	1 . 01	. 0	2 T.	. 01	T.				T.	T.	T.		. T.	. 1	8 .30	. 08	T.	1 0	11 71				. 68	8		!	18 T	4	10 . 4	0 . 3	90
Firereide	do		1.5	2 9	71						111	PI .		1	11.116	D . I.	3 . Zi)	1 - 11	11 . 22		01			- 10	0						3	4
Sylvan Pass	Vellowstone	- 2	1			. 30					T.		****	T.	. 6					. 0.	1 1.				1								
Tower Falls	do		. T.	T.	T.		T.				. 1	5	. 08	3	20	0 .1	5 . 10	10	0 .30	0 . 1	5								T			30 .3	
Ipper Geyser Basin	Madison																60		. 20	0				4	0					5	20		
Montana.																														-			
del	Missouri				40	. 20		. T.			.4	0			10	T			Т.	T.	T				1	0							
gricultural College	Missouri Gallatin				07	7 .10	T.				.3	2 T.			. T.		. T.		1 7	1	0	Q				1		- 1	()6		11	
ugusta	Missouri				20)										1	0		H	0													*
labb	St. Marys Missouri	***	* * * * *	i m										T	2	T	- 10	9	5 1	1 0	7 7			T		7 T			11	0	05	25 .6)4
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lillings	do						4		-		1 . 63	81							-1	-1		-1									a a A		
																																	• •
Blackleaf	MISSOUFI	T	· ·	m	17						.0					. 0	6 0	3 0	5 0	2 0	3	7 0	3 0	3 0	2 0	2				T		03 .6	02
Browning	Marias				10)										.0	5		. 0	4				. 0	3			** **			01		21
SUSDV	Yellowstone	***		.0.	T.		.0	1	T.		T.				· .0	1	Т.	.00	T	T						. 1						03	
Puetood											. 0.		***		1 0			0 0	0 0	1				1								01 .	02
Browning Bushy Creek Canyon Ferry Cascade	Jefferson				61	L										4		61 . 11	3 . 11	11				- 1	6								

MONTHLY WEATHER REVIEW.

Table 2.—Daily precipitation for December, 1912. District No. 6—Continued.

Stations	Watershed.											11			I	Day	of mo	nth.														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 2	21 2	22 2	23	24	25	26	27	28	29	30	31
Montana—Contd.																																
	Missouri	.03	T.	T.	. 29						.40				.07			.04			.14				.04			****		Т.	.06	T.
nester	Marias Milk	.01			T.										.01	T.										T.	****				.08	
earcreek	do	. 10			T.	.08 T.										.04			0.3	T			1		-01						.02	T.
emonsydepark	Missouri Yellowstone			.08	.05 T.	.04		T.		****	.11				.02		.03		.02	T		01 .			.02				.05		.02	
onrad []	Marias				. 10							703					.03	02			T			T.		T	.03		.04	.03	T.	T.
opper	Missouri Bighorn	.05	T		T.	Т.	. 02	T.			.02	1.						. 02													****	
ilbertson	Missouri			T.	. 20		T.											m.						1		.05					. 20	
at Bank	Marias Missouri	T.		****	.10						.03					. 03	T.	T.	The l	05									T.	****	T.	10
illon	Jefferson				. 20	. 15	.02				40					.10			.08	. 05	.03 .						****	.02			. 12	.10
ry Creekry Wolf Camp	Missouri	.08	.03		.40	.20	.08	16		.06	. 40				.02	. 40	.04	.23	.02	. 13	.12 .				.12						.02	T.
unkirk	Marias				.02												.06			05		04	T				****		.05		T.	
ast Gallatin River.	Gallatin				.35	.03	.01 T.	T.			. 20	.01	.03	****	.02	.03							T									
kalakalkhorn	L'le Missouri Jefferson		.02	.03 T.	.09	.06					.01			T.	.02	T.					.06		.05		. 04					. 03	.02	.01
allon	Yellowstone	T.	т.	T.					T		T.				T. T.	.03 T.	.07	. 13	.02	T.	T.	T				.01	T.		.01		.01	
indonish Creek	Missouri Jefferson		T. T.			.08		.02			.03				.04		.02	.02	.04	T.	.05 .		***	.08	****				· dy		T.	.21
lathead Creek	Yellowstone	T.			. 14	T.					. 11				.07		.08	T.	T												T.	
orsythort Benton	Missouri				****															т.							****				***	
ort Shaw	do					02									.02				.03					T.	****		T.				T.	****
oster	Bighorn Missouri				****	.00			T.																							
lasgow	Milk			T.	T.															Tr.			. 20 . T									
lendive	Yellowstone		T.			.10	T.	T.		T.			****			.03									T.			****				
oldbutte	Marias Powder						T.	T.	.01						T.	. 03							T		.02	T.			****	****	.06	.01
rayling	Madison	. 03	. 03		.07						T.				T.		.05	.07	.01	T.	.01	.09	.01								****	
reat Falls	Missourido				T.	.20					.00		. 15		. 13	T.	. 40		.08	T.		. 18	T. .	***						****	****	
Iarlowton	do														Т.	.01			T.				.02		.04		****				T.	
lavrelelena	Milk Missouri			T. T.	.04	T.	****			i	.02				.03	T. T.	T.	T.	.01	T	T			T. 1	.01			.02	T.	.06	.04	.03
lighwood	do	. 10			. 40						. 27				1		Т.	.05		.30				***		****			****	****		
luntley	Yellowstone Gallatin				10	.10				22	11		****								.36 .											
ones Canyon	Missouri					. 40																-						1	1			****
nobles Ranch	Milk			19							T.				T.			T.	****		20					.01						
ewistown	Missourido			. 13	.02						.08					.05				.21											T	****
ytle	do				.04			T.			T.				T	.05 T.		****							T.						. 04	
falta fedicine Lake	Milk Missouri		1		T. T.	.05	.05										.20			T.			m.								****	
fildred	Yellowstone			T. T.			.02																.02		T.			1				
liles City	Madison			Т.		T.	.02				.06			****								.09 .										
orris	Jefferson										. 02				T.		.01	. 17			.09	***			.05	****					. 02	.02
inegrove	Missouri				.11	.10					15				20			no							. 15					. 16	3	T.
ipestone Pass	Jefferson Yellowstone			.02	T.	T.	T.	. 04										T.					.03 T.		.03	T.			****		T.	
oplar	Missouri			T.	T.	T.	T. T.										T.				T.		1.									
led Lodge	Yellowstone. Jefferson	. 18				T.			1										T.												T.	
Ryegate	Missouri										T.			****	.04					T	T.		CTS .		T.		1	1			0	
avagehelby []	Yellowstone. Marias							1													T											
idney	Yellowstone.																			T.			.0i		T.	****					T.	T.
pringbrook	Yellowstone do Missouri	·T.	T	.01	T.	T	T.	.03			0.05		1	.02		T.				. 00									T.		15	. 04
unlit Farm	Milk			T.											.05		. 10							. 10							. 1	
un River Canyon	Missouri	1	1		91	01					90				07		****	.02	****	****	.02	.05										
rail Creek	Yellowstone Missouri			T.	T.					. 14								.09			.02				****	T					T	
alentine	do				T.										T.	T.		****	T.	****	****		****			A .						
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Vall Rock Mtn	Missouri				. 53	i . 03	1			. 07					22	. 19	. 23		.01	T	.09	.05	.01	****	. 04	.00	3				1	0.0
Varm Spgs. Creek	Madison Missouri				. 13	.06	.00	6			. 0.	.00	2	1	.09		T.				.01					***						
Wheaton Whites Ranch	Yellowstone						T.	.0	2		T.				T.	750	Т.	T.	· · · ·	T.	· · · · ·		T.		(T)				T			
White Sulp'r Spgs	Missouri				T.	T.	T	Т.			T.					T.		1.			Т.					T.	1				0	5
Wilder	do		T.												. 04	.0	1		T.		.08			.01		***					.0	3 .0
Voodville	Jefferson				. 0	.04	.0	1			.0.	5 .0	1		.03	.0	. 02	. 10	T.	.01	.08	. 03	. 02	I.	****	***				1	1.0	1
North Dakota.											-			-			12					T.										
plin	Knife										T.	1					12															
Arnegard	Missouri																40			. 10		****	T.									
Beach	Little Mis-										. T.				0			***	* * * * *	T.	****		1.	***				* * * *				
Belfield	souri. Heart						T.	T.								. T.					Т.		T.	***	. T.							
Berthold Agency	Missouri	. T.		. T.			T.	T.			T.				. T.		0	T.	3	.01				***	. i.i.	T.						
Bismarck	do	0	1	· T.	T.	T.	T.0	4 T.			Т.								. T.													
Buford	Heart						. T.	T.			. T.						30					· m	T	m	T.					* ***		
Dickinson	do					T.	T.										T.)		Τ.		1.	L	1.			18					
Edgeley	James Missouri				-																						* **					16
opping	do		. T.		T.										. T.		0	4	3	- 10	T	****		***	T	1	2				(12
fullerton	James	0.	2					T.			. 0	0			T.		1	0 .1	0	0	5		****			()5				T	
	Missouri				. T.		TT	T			. T						. T.				T.	****	T.	T.	.0	2	** **	** **	** ***	** **	** **	
	Grand					-	(TI)			1	1			1	.1		0	1												K K K P		3.1
Garrison Haley Hettinger Howard (near)	Grand do Missouri				T.		5 m	/D			m				T	-1	. 2	0		16	20					100			. 1			3h

Table 2.—Daily precipitation for December, 1912. District No. 6—Continued.

Stations.	Watershed.														D	ay o	f mor	ith.															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Torth Dakota-Con.																																	
eHenry (near)	James																																
armarth (near)	Little Mis-								1						T.			T.				T.	.01 .	***	.01						.02		. 0
arstonmoor	James Little Mis-	.21		T.		T.	. 10	T.			T.					T.	. 10	T.		T. T.	T. T.				. 55	T.					T.	T.	
edora	Little Mis- souri.	***	****					****							****			****		T.	T.	T.	T.		T.								. '
	James						T.										T.	. 20													T.		- (
ott	Cannon Ball Missouri			****			.01			****							. 22	.03	****	.02	10	****	T.		.08					****			. (
ew England	Cannon Ball										T.									T.			T.		.03								. (
	James				T.										.02		. 20			. 10						T. T.					T.		. 6
ew Salem	Heart Cannon Ball																			. 10					.05								
anger	Little Mis-										****				****		****			****													-
teele	souri. Missouri	.01					.09								T.		.01	T.			T.				.01								
	do							m									. 10	T.		. 05					T.	т.				****			
Vashburn	do						.02								.02		.09			.04					T.	1.		1:::			.01	T.	
		1	1													1																	1
South Dakota.										1																							
herdeen []	James	T.																	****		T.									. 18	5	.02	
cademylexandria	Missouri		3			. 15 T.	****	****	***		****	****				****	T.	.10 T.		T.					****		***		****				
rmour	Missouri			****		1.		****					****																				
ellefourche	Chevenne							T.	T.		·	m						T.		T.												T.	
rookings	Big Sioux			****	****	.08					T.	T.		****				.12			****				****								
amp Crook	Little Mo					T.	****	T.	.0	5					T.		T.		****	T.		T.	T.		T.						. T.	T.	
antonascade Springs	Big Sioux Chevenne	****			. 20						****						****	****			****	****		****									
astlewood	Big Sioux						T.	T.			.03	T.				T.			T.		T.			T.							. T.		
enterville	Missouri					.30							***				T.	.02	.07	.02				T.									
hamberlain	James	T		****	****	.10	****	110)		.02			1		T.		.20		.03		****	.02	T.		****		1		0	5		:
ottonwood	Missouri																T.																
	Cheyenne						****			-						***																	
aviston	Owl Cheyenne	****			.02	. 05	****	110	5.5	5			1		. 18		.05	.10			. 25					T.	1		1:::		0	5	
eerfield	do	T.	****		.01	.01	.02		6 .10	0	T.	T.			. T.			.09		.11		T.	T.								0	5	
e Smet	Chevenne					****		T.	2	0		T.					T.	T. T.					****	****	****								**
umont	do	. 14	4	, 01	.10			.07		5					9 .0			. 43		. 31	. 04				.07		9						
lagle Butte	Grand			***			T.	T.		1	T.			1			.01				00	T.	.01		T.				-		T		
lales	Missouri Chevenne		1000			.02	. 02	.0			1.	1:::						. 26		1 00			.01					1			0	5	
llingson	Grand					T.					T.	1					. 02	T.					T.		T.								
inglewood	Cheyenne						.01				T.			-1				.04					T.		T.			-1					* -
ureka	Missourido					.12	.01									-1		.03							1								
aulkton	James							1									30																
Clandreau	Big Sioux James					.20	T.		1								15	.30 T.		T.			.01			***							* *
ort Meade	Cheyenne					T.			3	0		2	0		1			T.	. 01		. 01										5	0	
rederick	James						T.	T.			T.							.12		T.	T.	.10			T.	6773				. 0	13 T		
reenmont	Chevenne Missouri					.19		0		- 1	.10			11:00	1	0		.10		.10		. 10	****			1.		1	1	1			
Hardingrove	Cheyenne								0	2		T.																					
Iardy Ranger Sta Iarveys Ranch	do			. 1	0 .07					0		1 T.		1-0-	1	0 0	5 .18	.17			5 T.	2	T.			0		1	0		T	2	
Hermosa	do					. 10									1		-	T.				F83											
Highmore	Missouri					.30											· ·	.05		T.			T.										
Hopewell	Cheyenne	T				T.	T	T			T.		1			1	. T.	.08	3	T.	1:::	T.				***							
Howell	James					.15	T.	T.									10	.00	2	. T.			T.										
	do							T											8												7		
pswich Kadoka	White	. T						. T.	. T									T.															
Kennebec	Missouri	. T				20)											. 0.			. T.												
Kimball	James					0.00			1									.0	8	T.		T.		.0	3								
.ead	Cheyenne	0	7		0	1 .03	.00	3 .1	2 .2	20					0	3	0	.0	7	. 0	7	0					3					3	
emmon																																	
Manderson					1	.23	T.				T						T.	.00	3 T.	1	. T.			T.									
Marston	do	. T				T.											. T.	.00	3	. T.													
Meadow	Owl James					30	T.	T										T.	2		T		Т.	T.	T.					T	T		• • •
denno	do	T				30)													1	0												
Milbank	Minnesota					T.	.0	7 T	. T									2	2 .0	7 .0	7	0											
Mitchell	James Missouri		* ***			08												5 T.	3		1		T.	.0	1	0							
Aurdo	White	. T				T.	1											T.															
)elrichs	Cheyenne									T																							
Onaka Orman	James Cheyenne			* ***	0		.0)4								. T.	T														02 T	T.
Ottumwa	Missouri	()5				. T.	T		05		. T						T.		. T													
Parkston	James Missouri	T											-				0	1 T		: :::									** **	7			
Plankinton	James	. T						6										1	6														
Pollock	Missouri						0	ia c	200	-	- T					1 1	0 7	1 0	O.	PES			T.	.0	4	. T							
Rapid City	Cheyenne				* ***	. 0	3	1.1	1 1			(. T	1.0	2	:			2										
Redfield	James Cheyenne		0	2 .0	01	0	4 .0	2 .1	18			3 .0)2		T			0	6	0	5											04	
Rosebud	White	1	15		. T.	. 2	0	T		20		(35					0	5 T	0	5										7		
Roslyn	Big Sioux	T				. 0	5	(13		T							i .2	0	: :::					. T					1 7	10 7		
	arrosonti			* * * *		0.0	5 .1	4			T							2	ò														
SelbySioux Falls	Big Sioux	- T																	2			T			T								T.

Table 2.—Daily precipitation for December, 1912. District No. 6—Continued.

Stations.	Watershed.	-	1		1				5						1															I		-	7
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
South Dakota—Con.																																	
tephan	Missouri					.10		T.										. 05	T.	T.		T.		T.									0.
amaimber Lake	Cheyenne Grand						T.												.10												70	****	0.
yndall	Missouri					*												(12.2		110											1.		0.
ale	Cheyenne				T.	T.	T.		.09			T.			T.			T.		т.												T.	0.
Vermilion	Missouri Cheyenne					. 30		.01	`ii				4					T.	. 05			.08				.01					.01		0.
Watertown	Big Sioux	T.				*	.13		T.			T.			T.		*		0000	40					0000		0000	0000					0
Ventworth Vessington Springs	James									****							T.	T.													***	****	0
Vhite Lake	Missouri					т.																											1
Vinner	White Missouri				.10												9	. 02		TP.													0
	MISSOUFI	1.				.41		****	****					****			1.	. 02		1.	****	****											0
Minnesota.																																	
ipestone	Big Sioux					.10					. 05						. 05	. 05															0
Colorado.														11																			-
rriba	Republican.	T.				. 55						. 20						.08								T.							. 1
uldhurst	S. Platte				T.							T.							T.				T.			.05					T.		0
Boulder											.09																						0
Burlington	Republican.					. 05					.10																						. 0
assellsastle Rock	S. Platte	T.			.33	.52		T.			T.	T	T.					T.					T.		.12	14					****		0
heesman	do				T.	. 33			T.																.08	. 14							. 0
heyenne Wells	Smoky Hill.					T.					. 02																						. 0
ope	Republican. S. Platte			****																									****	****	****	****	
enver	do				.30	.01		T.			. 03	T.										T.				.11							. 0
dgewater	do				. 40						. 01															. 13				20			. 6
ort Collins	do			T,	.03	****					.05							T	T.	Т.	T.	T.			T.					. 10			. (
ort Lupton	do				. 50						. 02															.06							. (
ort Morgan	do		TD.	T.	T.	. 03					*	1.13														T.							. (
rancesrys Ranch	do	T.	T.	T.	. 20			T.			T.	.00					. 05	T.		.08 T	.01	.03				32				.05 T.		T.	
eorgetown	do				08			T.								T.	T.	.06	T.	T.						.09			T.		.10	.12	
reeley	do	·																													· · · ·		:
rover (near)	do	T.				T.			. 03		T.					T.		.04 T								T				T.	1.	T	- 1
lawthorne	do				.51	.02					.08	. 02											****			. 22	2						.11
lolyoke (near)	Republican.	. 13				.10											(P)																- 6
daho Springs	S. Platte				. 08	.23		T.	.01		T.	Т.					T.	T.		T.										T.	. 04	T.	1
ersev	do										. 20																						.16
aporte	do				. 13						. 13															. 10					70		- 6
eroy (near)	S. Platte	. 02			0.9	.07					. 04											т.				16				.01	T.		- 6
ongs Peak (near)	do									. 05																.33	3						. 6
ferino	do																			1													
foraine	do				25			T	****		07									****			****	***		21	3		***		T		- 1
t. Cloudedgwick	do																																
edgwick	do	. 05				.07					. 02						. 02												1				- (
ilver Lake picer (near)	N. Platte										****									****			****	****						****		***	-
terling	S. Platte				T						.06															T.							. (
Waterdale Wray	Republican.										000														Т.								: (
uma	do	T.			. 03						.00															T.							1
Nebraska.		-	-												1					1						1	1						
insworth	Niobrara	. 14				. 25			10			T						T.															
lbion	Loup	T.										1.						T.															
lliance	North Platte	T.							T.		. 08							T.											T.				. 1
lma	Republican . Loup	T.				. 03																											- 1
rden	do	T.				1. 10				1.		1						T.		T.		1				1	1000						
shland	Platte	T.			T.	. 07											T.									1							. 1
shtontkinson	Elkhorn					. 08	96		Т.			.01						T										1					
uburn	Missouri	. 22	. 05		1.	T.											T.	T.													1		
Beatrice	do		. 09																	1			1.								4		
Beaver City	Republican . Missouri		3 . 03			. 20 T.			T.									04					1		-	1	1	1			1		1
enkelman	Republican.	. 40)				.30		4.														Inco.			1		1			1		
Bertrand	do		. 04	1			. 19										T.															(70)	
lair	Missouri Loup	. 12	2			. 05												T.										2				T.	
lakeloomfield	Missouri					.50)												T.		
radshaw	Blue		T.			. 05						. 00	2																1		1		
rewster	North Platte		1			20)	T.	T.									T.								1			1	6 90)	1	
roken Bow	Loup					. 12																				1							-
runing	Blue	T.				. 01			Т.			. 0%	2				Т.												1				-
Burge	Niobrara Loup					25																			1	1			1				-
Butte	Niobrara	T.				1.10						T.			-		1	T.					1			1		1					-
airo	Platte					. 36																											
allawayambridge	Republican.	T.	1			. 50					T.			-			1	T.								-							
olumbus	Loup		1			T.									-		1						4		-	1			1				
rete	Blue																																-
ulbertson	Republican . North Platte											T.						T.	1						-								-
urtis	Republican .	.00	2			.00					. 05								7					1		-			1				
avid City	Blue	1	1	1	1	06	1	1		1											1		1			1	-					1	

TABLE 2.—Daily precipitation for December, 1912. District No. 6—Continued.

Ctations	Watembed]	Day	of m	onth				-										
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Webraska—Contd.																									-							
mas	Loup					. 30																										
n Creek II	Republican .		.40	****		.31		****	****	****							.20	****														
ieson (near)	Loup					.50				****				- * * *																		
ring	Elkhorn		****		***	T.				****		T.				****	T.	T.	****	****	***	****				****						
eterirbury	Bluedo	. 10	****	****		T.		***		***		. 05					T.	****														
irmont II	do	T.				T.							. 05				700															
lls City rt Robinson	Missouri White	. 22	.09			T.			****	***	. 15	****					T.					****	****									
inklin	Republican .	T.				T.																								T.		
emont	Platte Loup	T.			****	. 10		****	****	****	****	T.	****		****	****		****		****	****	* * *				****	****	****		T.	****	
neva	Blue	T.				.02			****			.08					T.	T.	T.													
noa	Loup					. 35				- * * -		T.	****					T.				****					****			****		
rdonsper	Niobrara Republican.	.04				.09		****										. 20					****									
thenburg	Platte	. 05				. 40																										
and Island []	Republican.	. 15				15	. 16		****	****	T.		***-			***!	****		****	****		****	****									
ecley	Loup	. 02				.30			. 02		****									****												
ide Rock	Republican .	T.				T.			T.	****	.20						****		- * * *	* * * *	****	****	****	****	***	****	****	****	****		***	****
lsey	Loup	. 05				.05			T.			T.				****		T.				****										
rtington	Missouri	m		****	00	. 40										****				T.	****		****							Tr.		
rvardstings	Bluedo	1.	. 03		.06	T.	T.			****	****	.02	T.			****						****	****	****	****					1.		
yes Center	Republican.	. 40				.50					. 10							750			****	****										
y Springs	White	T	.02		. 10				T.		. 05	T.				****	T	Т.			****	****	****		****		****					
mingford II	Niobrara	.04	.02			. 03			.01			. 04	.03			****			****													
ndley	Republican.					.30					T.							.01														
ershey	South Platte North Platte			****		.10 T.		****	T.		A .	****	****					T.	.01		****					T.						
ldrege	Republican.					. 02									***							****										
oper ill (near)	Elkhorn North Platte	T.			T.			****				. 05	****				Т.	T.			****		****		T.				T.		T.	
perial	Republican.	. 10				.06					T.							. 05													T.	
arney	Platte				. 10	. 10				****	TID.		***					TD.				***				. 20					. 05	
mball	South Platte Niobrara	T.			. 10	.20					4.	T.														. 20					. 00	
wanda	North Platte									****		T.																				
cington	Plattedo	01	****		.30 T.			****	****	****		T.	****				Ť.	T.			****				****			****		T.		
dgepole	S. Platte	T.				.30					T.															T.						
up City Cook	Republican.							4499			T.	T.								****												
Cool Junction [].	Blue	T.				T.											****															
dison	Elkhorn									****		T.						T.	T.								****			T.		
rquette	Blue Loup	04							.20									Ť.	****	****	****	****	****		****					1.		
son City	do					. 40																										
natare	N. Platte Blue				. 30	.16			02	.30		Т.													****		****		. 10			
chell	N. Platte			****				. 2	.00													****									T.	
braska City	Missouri			****		T.						T.	T.				T.															
lsonrfolk	Blue Elkhorn		****	****	****	.20			****	****	****	T.				****		T.		T.			****								T.	
rth Loup	Loup					.20						T.			****		****															
rth Plattekdale []	Platte Elkhorn	.06	****			. 12						01				****		.05				****		****							T.	
naha	Missouri	.24			.01	.04			T.			T.					.01	.02														
Neilld	Elkhorn		T.		****	. 28	. 41											T.														
leans	Republican.				****												****															
ceola	Blue					T.						T.						T.														
lisadelmyra	Republican . Missouri			****	. 09	T.						T.	****				****	****		****		****	****	****	****	****	****	****				
wnee City	do	.27	.03	****								T.																				
xton	8. Platte Blue	. 20	****			. 05												T.														
mouth rdum	Loup	.05				. 10			.02			T.				****		T.														
venna	do	.02				. 16		T.				T.																		·	T.	
d Cloud Libory	Republican . Platte	T.				20			Т.		T.	T.												****	****				1::::			
Paul	Loup				****	. 13						T.																				
itee	Missouri																	****														
gent	Loup Platte					. 23						T.						T.														
ttsbluff	N. Platte	.01			.02	T.		T.			. 09						****	T.													T.	. 03
ney	Blue S. Platte	05				20					10	T.													****	.01				.01	****	10
ingfield	Platte	.20				. 02							T.					.02														
ingview	Niobrara	T.				. 20			T.			T.												****							T	
ntonatton	Elkhorn Republican.	****	****			. 10	****									****																
perior [do													****		****																
ble Rock	Missouri	.20	00		T.	T. T.	·in.				****	Т.	• • • •	****		T. T.											****				****	
eumseh	do	.30				T.										T.																
kamah	do	.04		****		. 22					****						T.															
iversity Farm	Platte Niobrara	.09		****	.07		. UZ			****	****							T.		T.		****		****	****							
hoo	Platte																T.															
kefield	Elkhorn					. 37											T.			* * * *												****
althill	Missouri Platte		****	****	****	.15	****		****	****																						
uneta	Republican.																															
eping Water	Missouri	. 19	****	****	***	.04	****	****				T.	****	****				. 02				****	****	****	****	****	****	****	****		****	
sper	Blue		****		****	00			****		****		****		****																	

Table 2.—Daily precipitation for December, 1912. District No. 6—Continued.

ns.	Watershed.														ע	ay o	mon	и.														
113.	W Wood Street	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Iowa.													-																			
on	Grand Chariton	. 35	.12			. 09												T.	• • • •				****			****	****				****	****
erton	Floyd										T.							. 10														
antic	Nishnabotna	. 22	. 05			.05											.03	.01														
dubon	do	. 03	.10			.02 T.	T.										. 05	T.								****	T.	****	****	****		
iford	Missouri Chariton					1.	1.	****	****		****	****	****				****	1.	****								1.					
ariton	do	1.30	.10															T.														****
rinda	Nodaway	. 34					T.																			****						
ning	Chariton	1.01	.15		T.	T.						****			****		T.	T.	T									****	****			
ydon incil Bluffs	Missouri				*		.05	****			****							T.	T.													
ston	do	.14	. 30			T.											T.		T.													
mberland	Nedaway	. 13															T.	T.			***							****		****		
nison	Missouri Nishnabotna	. 41	T			T.											T.	T.		****		****	***	****	***			***			****	***
enfield	Nodaway	34	.05			.20											T.	T.														
rlan	Nishnabotna	.27	.01			.10	T.										T.	T.	T.	T.	T.											T.
wood	Big Sioux					. 30													T.						****						****	****
ke Park	Little Sioux.	T.	.ii	****	.01	.10					T.		****			****		T								****	****		****			****
moni	Grand Little Sioux.	. 00			. 01						****																					
Mars	Floyd	T.					. 32										T.	. 02		T.												
nox	Missouri	. 25			***	T.	****											T.	70					****	****	****			****	****	****	
n	Grand Little Sioux.	.82	.07		. 10	T.						****		****				T.	Т.							****					****	****
tle Sioux	Missouri					. 13											T.	.02														
unt Ayr	Grand	. 65	. 20															T.														
rray	do		.06			.05	T.					T.					T.	T.					****									****
orthboro	Missouri Little Sioux.	. 23		****		T.				****				****			T.	.06			****				****	****		1			1	****
lebolt	Missouri	.20																.00	T.			10000										
cific Junction	do				T.	. 03			T.			T.					T.	T.														
ock Rapids	Big Sioux	·				. 20											T.			T.											****	
eldon	Floyd	T.	T.		****	. 10 T.			****	****		****	****				T.	36	.05				****	Sec.		10000				****		
oley oux Center	Big Sioux	T.	1			.20					T.						. 05		.00													
oux City	Missouri	T.			T.	. 50											T.															
encer	Little Sioux.							·									· · · ·	700	70						****							
urman	Missouri Little Sioux.		.17		T.	T.		T.	****			T.	****				T.	T.	T.	****				****	****				****		1	****
asiita	Dittie Bloux.		1			. 40								1	1		1						1		1	1	1	1	1	-	1	1
Kansas.															1					1												
flama	Smoky Hill.	T.	.34							T.					1																	
oilene gricultural College.	Kansas					T.				1.		T.					.01															
ton	Solomon					T.					T.							T.								***						***
chison	Missouri		.04		T.			17700									T.															***
loit	Solomon	.01				T.					T.							.02												* ***		***
akemanue Rapids	Republican . Blue	T	13	3	****	. 10	****			****	.09	****	1	1			1	1	1		1	1				1		1				
ntralia	do	.30			T.							.01					T.															
apman	Smoky Hill.																															
ay Center	Republican.	. 30				T.					.05	T.											****									
olbyoncordia	do	.03			1	T.				****	.00	T.		1		****							1		1	1						
ensmore	Solomon	. 01				T.					T.	T.						T.														
resden	Republican.	.00				.06					.0:							.03														
llsworth	Smoky Hill.			1	m	T. T.					T.	****					The state of	T.														
nmett	Kansas Smoky Hill	. 36			1.	1.					****						A.				***							* * * *				
kridge	Osage		T.								1					1																
rnsworth	Smoky Hill	T.				T.						T.																				
ort Scott	Osage	. 50		. 25						****		TO.					m															
rankfort	Blue Osage	T.	8		.03	****						T.	1				T.	****			***					***						
arnettoodland	Republican		5			. 20					.10	1.10)					T.														
anover	Blue				T.	T.						T.					T.															
arrison	Republican		T.															T														
aysill City	Smoky Hill Solomon		1															T.														
orton	Kansas	7	8 T.	1		T.				10000																						
oxie	Solomon	. T.				T.						T.						T.														
awrence	Kansas	. 4										T.					02					-										
eavenworth	Missouri Solomon	. 20	T.	Т.										1:::			.02					-										
oti	Smoky Hill	. T.				T.						en.																				
ncoln	Saline	. T.			1																											
indsborg	Smoky Hill					·			1														* * * *					* * * *				
Cracken	Solomon		8			T.											T															
nneapolis	Osage		5		4 .01																											
toma	. Saline					T.																										
orton	. Republican	. T.				.10						T.						T.														
berlin		. 0	8				3					2 .00					.00	. 0	.0													
athe		7	3	. 1	4										0	3	00	3														
tawa	. Osage	4	2	3	2																											
hillipsburg	. Solomon	. T.				. 03					1 1999	T.																				
ainville			5		3							T.										- 4										
leasanton	. Osage		5		3 T.	***	8																									
epublic	Republican		. T.						. T.		. T.	T.																				
ussell	. Smoky Hill																															
ussell Springs	do				9	14						7						- in														
Francis	. Republican Smoky Hill	. 0	6 .0	2		T					100	T.																				
ott				2		. T.			-			. T.																				
nith Center	. Solomon	0	2			. T.					PER																					
peka		1 9	1	. T.		. T.	1			1		. T.		- 2			. 0						- 1									

Table 2.—Daily precipitation for December, 1912. District No. 6—Continued.

-]	Day	of m	onth															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
ansas-Continued.			-																														
Valley Falls	Kansas	. 65	T.			T.						T.																					. 0.
Vinland	do					.08					****	****																					. 0.
Wakeeney	Smoky Hill.	T.		****	****	T.														2000					****	****	****	***					. 7
Wallace	do			****	****		****										·	****			****	****							****	****		****	1
Warnego	Kansas	T.	****	****	****	T.	****	****	****	****		T.	****	****			T.	****	****	****				****						***		****	1
Missouri.																																	
moret	Osage	.78		. 21													****																. 0.
	do	. 42	.10	. 22																													. 0.
rthur	do	. 40	.10	.30																		****											. 0
valon	Grand																					****	****	***	****		****	****	****				. 0
ethany	do																							****	****		****						. 0
olivar	Osage				.05																		****			****			****				. 0
oonville	Missouri	. 04	. 42	m	. 19	T.	****												***	****		****				****							. 0
runswick]]	Grand	T.	. 35		. 24											****	****		****	****		****	****										. 0
linton	Osage Missouri	- 48			.01	T.	****													****			2000				****						. 0
olumbia						1.	****	****									19						****						1			1	. (
ocker	Gasconade Osage	96			10		****	****		1							T.	****	T.														. (
dondorado Springs	do				. 10		****	****	****							****						1	1000										. (
vette	Missouri						10000	****																									
ilton	do				1000																												
lasgow	do				****										****																		
rant City	Grand	. 60	.10		T.							****					T.	T.	****									****	****				. 0
arrisonville	Osage	. 10	. 50		.35		***				****			****											****							T.	
azelhurst	Grand		T.		****									****								****	****		****	****							. 0
ermann]]	Missouri		. 04		T.	.01														T.								T.	****	/ID	****	***	0
ouston	Gasconade		. 30				***	***	***						****		****	****	T.											T.			. 0
efferson City[[Missouri		. 15					****						****		****		.11	1.		***	****		****						****	****		. 0
ansas City	do								***						****		-01		****		****		****	***		****							1
idder	Grand				T.		10000													****	****	****	****	****			****		****			T.	
amonte	Missouri		0.0																						****				****	****			. (
ebanonexington	Osage Missouri	. 09	69		99											****		.02											1				. (
iberty	do	****	* 02	07	. 66										****			. 02	1														. (
ockwood	Osage			.01	****					1																							
arshall	Missouri																																
aryville[]	do					T.												T.															. (
ount Vernon	Osage																	****					****										- (
evada	do																						****	****									. (
regon	Missouri	. 43				T.													****						****		****	****					. (
attonsburg	Grand				****				***																		****			m			1.
olla	Gasconade				.02		.08																1					· · · · ·		T.	m.		. (
. Charles	Missouri	T.	.10			T.			****								. 20		773			***	****	× * * *		****		T.	****		T.		. (
	do				T.	T.			***		****	T.					.01	****	T.			****			****	****	T.		****	.05		***	. (
. Louis (1)	Mississippi	. 23	****		T.	T.			****	****	****	****	****		****		94	****	T.	****										.01			. (
Louis (2)	Charitan	. 22	****		T.	-01			****	****	****		****			****	. 24	****	1.	****		****								.01			. (
ablett	Chariton	90	00		****															****									1		1	1	. (
arkio	Missouri				.03														****		****	****			****								
renton	Grand Chariton	. 04	59																			1111											
nionville	Missouri	90	10	37	1.	1.	tour.				****													10000									. (
Varrensburg	do	7	13	.01																								.01					. (
arrenton[]	Osage																		T.														. 0
										10000		* * * * *										1									1	1	. (

^{*} Precipitation included in that of the next measurement.

\$ Separate dates of falls not recorded.

||Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

							,	Wyom	ing.													Mont	ana.					
Date.	Bas	sin.	Chey	enne.	Lara	ort mie.	Lan	der.	Newc	astle.	Pathf	inder.	Sheri	lan.	Yell stone		Billi	ngs.	Dill	on.	Hav	re.	Hele	ena.	Lew		Mal	ta.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	40 44 48 47 50	16 20 22 20 21	34 41 45 43 18	19 19 24 16 10			33 38 46 39 27	10 7 12 15 2	36 41 41 35 24	18 16 21 20 10	33 30 29 30 27	9 13 18 21 5	35 45 44 45 29	18 19 26 18 14	21 25 29 27 18	5 20 23 13 3	40 43 45 37 34	20 23 29 28 13	52 50 53 50 48	20 22 19 21 20	18 44 52 39 28	1 7 26 5 6	35 41 48 36 30	26 23 34 16 16	34 37 43 25 31	10 10 11 23 10	30 43 42 40 22	10 18 15 - 3
6 7 8 9	54 50 49 55 50	22 18 16 15 12	27 32 37 45 33	10 20 18 18 18			33 31 37 33 29	- 1 5 9 9 11	28 - 36 - 34 - 47 - 38	10 18 20 .18 .20	20 28 28 31 30	5 15 8 9 14	42 43 49 56 36	15 24 25 18 5	24 28 34 38 27	9 15 13 15 7	42 46 51 60 31	26 30 24 30 21	43 41 39 43 40	6 10 12 12 12 13	41 43 53 49 30	27 22 24 30 13	38 42 41 47 30	28 27 29 23 15	41 41 53 55 25	10 29 27 25 22	42 44 46 52 42	10 30 20 17 19
1 2 3 4 5	- 46 48 50 44 45	10 14 16 8 10	25 47 49 51 39	3 15 34 34 20			22 33 35 46 32	- 2 8 12 20 9	24 45 45 46 45	10 10 20 22 16	22 35 37 40 37	- 2 12 25 27 27 22	25 40 50 52 34	6 13 16 23 15	29 35 37 34 34	6 25 25 12 14	31 46 52 37 41	25 21 30 17	39 41 46 40 37	3 12 14 16 10	36 47 54 44 35	4 26 20 25 12	29 46 45 44 34	10 28 29 20 19	41 47 50 40 37	7 7 22 32 14	23 46 46 42 34	0 8 23 18 10
6 7 8 9	42 45 47 50 47	12 14 16 20 12	34 29 40 34 23	26 17 15 15 7			35 35 44 28 29	13 18 8 11 2	30 28 30 30 24	20 22 10 20 10	35 30 30 32 24	18 16 11 18 3	38 35 48 33 30	20 28 18 18 8	30 25 29 21 13	21 17 17 9 4	35 38 50 38 33	15 28 16 26 12	39 38 38 35 34	7 11 4 9 7	34 32 46 34 28	11 17 9 15 17	37 36 43 31 27	22 26 21 23 21	30 21 38 27 31	19 20 16 19 3	35 33 43 42 30	8 15 5 23 8
21 22 23 24 25	45 43 40 37 36	10 12 6 2 - 2	19 33 40 38 23	6 7 8 21 - 5			26 26 28 39 27	- 3 - 4 - 2 9 5	20 30 37 32 24	5 0 8 18 2	19 18 26 31 26	$-rac{4}{20}$ $-rac{10}{22}$ -10	27 40 45 43 31	9 4 11 22 6	12 19 22 22 22 15	- 8 4 10 6 - 7	35 44 42 39 38	15 13 23 28 11	36 37 37 35 33	6 11 12 9 0	32 40 49 34 32	7 23 23 25 7	28 36 41 38 30	18 24 26 25 15	47 42 30 40 40	19 35 25 23 32	30 40 46 40 34	3 10 8 18 7
26 27 28 19 10	38 34 36 38 36 42	- 5 - 5 - 5 - 5 0	27 47 38 34 38 39	- 2 23 21 15 17 16			34 30 38 49 49 41	3 2 9 3 8 8	31 42 35 30 35 38	4 12 20 26 30 9	25 33 30 28 35 35	5 17 21 5 25 11	43 51 47 48 53 47	5 14 16 11 29 19	19 29 21 27 30 28	6 4 8 9 13 19	41 52 40 42 48 45	17 29 27 22 32 12	32 39 40 37 34 35	7 12 11 15 14 10	46 53 36 47 44 44	16 34 22 16 24 21	39 42 32 48 47 41	23 17 22 22 22 31 28	41 44 32 45 35 40	20 23 23 17 25 13	48 55 43 50 40 43	5 28 12 10 23 8
Mns	44. 4	10.5	35.5	15.1			34.5	7.0	34.2	15.0	29.4	12.7	41.4	15.9	25.9	10.9	41.8	21.5	40.1	11.5	40.1	17.3	38.1	22.8	38.2	19.1	40.2	12.5
		Mon	tana.					N	orth I)akota.		~								\$	South 1	Dakot	8.					
Date.	Miles	City.	Pop	plar.		thold ney.	Bism	arck	Dick	inson.	Jam tow	n.§§	Willi	ston.	Ab	er- n.§§	Ellin	gson.	Hu	ron.	Kad	oka.	Kim	ball.	Pie	rre.	Raj	pid ty.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	27 44 44 38 28	22 20 35 22 13	35 45 42 39 17	7 5 20 13 0	33 31 37 41 19	11 0 16 18 3	35 20 37 47 13	5 2 16 13 4	35 38 39 38 17	10 3 25 26 2	31 33 35 37 25	20 - 3 18 20 9	32 39 40 40 16	3 5 20 6 - 2	30 31 43 41 20	28 - 4 - 1 19 10	35 39 43 42 22	11 6 28 16 6	38 30 48 48 27		42 45 50 50 33	15 9 25 30 9	• 40 38 48 53 42	18 3 24 24 11	39 45 48 49 23	17 8 23 23 9	38 40 49 49 26	16 14 32 26 14
6 7 8 9	50	21 33 20 27 25	41 40 43 52 41	13 20 2 18 4	55	11 4 18 5	35 40 26 59 34	5 - 2 - 9 26 3	36 39 35 54 41	9 16 - 8 23 3	36 36 32 52 34	- 4 6 11 - 5 20	39 41 37 52 29	16 - 1 - 4 23 - 3		-10 -2 -13 -5 17	35 39 34 56 42	10 12 - 5 25 8	36 46 14 56 40	11	41 51 35 43 38	6 30 0 18 16	30 45 40 55 42	26 - 7 10	42 47 24 55 42	6 15 - 1 23 11	42 46 39 62 37	13
11 12 13 14	53 48	13 18 20 28 20	12 52 45 47 42	- 2 13 16	42 43 47	12 15	8 44 45 47 35	- 4 - 2 19 22 21	7 45 48 48 59	20 25	3 33 43 43 43 32	- 3 17	7 43 42 43 39		40			1 21	53 50	- 5 20 18	53 59	20	16 39 52 53 47	- 5 22 23	14 54 54 54 43	27 28	55 58	33
16 17 18 19	44 36	26 26 17 32 18	39 33 39 42 29	25 1 19	27 27 35	- 2 13	24 26 21 35 26	18 12 0 12 9	29 26 30 34 29	16 2 12	23 25 22 30 20	17	37 36	13 2 12	22 36	12 17 3	30 32 36		30 25 37	19 9 15	34	20	26 38	18 12 12	34 28 28 41 36	20 16 18	36 43 37	24 20 20
21 22 23 24	44 41	16 18 35	23 39 36 37 38	10 8 6	38 36 38	- 9 10 13	36 34 38	0 -2 17 18 9	21 33 38 37 28	5 10 24	33 36	- 1	38 34 39	6 13 23	30 38 22	- 4 9 15	33 44 40	12 15 28	34 36 40	19 18	46	22	40	8 19 22	30 40 45 47 34	12 21 23	38 49 42	2 2
26 27 28 29 30	42 41 50	32 25 24 34	33 50 40 43 48 44	16 9 10 28	47 39 37 40	13 15 8 20	39 34 42	11 16 20 18 27 17	32 47 38 37 46 42	23 19 9 20	14 37 36 29 40	1 4 15	48 38 35 42	30 19 19 29	45 46 28 47	12 18 13	51		48 46 38 55	7 20 17 14	55 43 38 52	24 30 20 17	48 38 58	16 23 26 18	47 41 55	26 22 26 27	39 49	21 22 22 22
	40.5			10.5						11.8	30. 2		33. 2			1	1				1	1	45		41. 3		1	

Table 3.—Maximum and minimum temperatures at selected stations for December, 1912. District No. 6—Continued.

																								,				
		1	South !	Dakot	a.			Colo	rado.										Nebr	aska.								
Date.	Sic	ux ls.§§		ter- n.§§	Yan	kton.	Det	iver.	Wı	ay.	Alı	na.	Brie		Gra		Ha		Heb	ron.	Line	oln.	No Pla	rth tte.	Oak	dale.	Om	aha.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Mín.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	40	30 3 3 18 15	43 27 43 48 13	31 - 2 - 1 18 12	51 35 53 55 38	18 8 31 27 11	41 51 54 50 26	24 20 32 20 7	42 41 51 55 38	30 17 20 25 15	48 52 57 57 24	30 11 15 24 16	40 43 48 46 31	30 15 24 28 17	42 38 55 56 20	36 16 24 31 18	45 46 46 48 25	25 10 20 25 12	59 39 56 45 27	40 18 23 27 18	60 36 55 54 46	27 17 30 32 17	35 39 52 47 30	18 15 20 28 9	40 37 53 53 30	18 7 25 28 13	56 31 50 49 45	30 15 30 34 16
6 7 8 9		- 6 - 6 18 20 20	33 34 22 49 30	- 8 - 8 -10 -10 -21	34 45 17 49 40	-1 -15 -1 17 11	31 40 42 50 41	3 20 16 17 21	34 45 42 53 37	3 13 16 18 25	33 47 30 54 50	5 14 19 11 21	34 40 41 52 38	5 16 20 16 20	32 51 48 45 38	8 24 13 22 30	34 41 37 49 36	11 17 15 22 15	36 50 40 54 43	11 22 11 10 32	30 45 31 52 42	12 26 11 13 24	38 41 36 49 38	5 20 16 20 25	24 42 23 47 36	-3 22 1 7 18	27 42 28 51 43	11 27 7 14 22
11 12 13 14	50 53 46	- 4 4 20 29 30	33 47 34 30	- 8 -10 - 5 18 22	14 57 51 50 44	5 3 27 26 29	30 49 58 60 37	15 13 28 29 24	34 45 58 62 46	16 12 22 23 18	40 47 52 60 52	16 6 16 17 18	28 43 53 56 40	2 6 15 19 18	23 39 52 56 48	16 13 23 30 30	23 48 50 55 45	10 5 19 20 20	37 41 51 61 52	19 2 22 25 26	24 36 51 59 48	10 6 27 30 26	30 50 55 60 46	12 12 21 22 20	18 36 47 52 42	2 0 19 24 25	22 33 49 54 47	10 8 29 30 35
16 17 18 19	34 30 36 25 29	34 22 22 12 9	26 25 33 25 19	24 21 13 7 - 7	38 21 27 40 30	29 22 18 18 14	41 36 50 45 31	23 22 18 16 11	45 41 43 43 46	20 26 18 22 12	48 44 44 45 39	20 22 17 15 13	44 38 44 42 30	16 22 15 17 7	41 36 39 46 37	32 23 22 33 20	37 35 38 35 30	16 18 12 23 12	44 41 38 47 44	25 25 22 20 21	40 36 34 47 36	26 25 24 24 18	45 38 40 41 35	22 22 16 23 12	38 30 32 42 34	24 23 18 17 14	40 34 30 46 35	31 26 23 23 18
21 22 23 24	40 38	5 10 4 10 10	15 30 35 35 35 30	- 7 7 10 15	30 40 40 50 37	15 12 23 25 23	24 38 45 53 31	12 8 13 25 7	33 40 46 52 38	6 3 15 13 12	40 40 49 50 41	3 6 10 8 10	32 37 45 47 30	3 0 9 16 15	39 40 45 60 42	13 15 18 25 22	30 35 43 45 39	10 3 12 21 15	44 42 48 49 50	13 14 17 22 14	42 40 47 54 44	19 14 23 26 19	36 40 44 53 37	7 6 14 16 14	33 37 44 56 36	10 4 15 18 17	42 40 46 54 42	21 21 26 28 28
26 27 28 29 31	46 50	10 14 14 16 18 25	27 41 42 36 49 39	0 6 17 12 18	35 51 48 40 57 46	13 16 25 21 21 26	35 53 44 47 50 50	20 21 20 29 19	43 57 52 37 60 44	9 16 17 12 19 12	42 56 57 43 58 52	8 14 9 9 10 12	37 53 46 35 52 41	3 16 10 20 28 10	42 54 54 42 62 50	14 22 26 22 30 22	36 52 46 35 38 41	6 18 25 18 20 10	41 53 53 42 63 50	19 20 22 17 17 21	40 53 55 41 61 50	21 22 28 19 22 24	38 52 48 38 55 44	7 20 15 14 19 18	37 53 48 40 58 45	12 12 20 15 12 19	37 50 54 39 53 48	22 21 32 26 26 28
Mns	40. 4a	13.9	32.2	6.5	40.4	17.6	43.0	18.0	45.3	16.3	46. 8	13.7	41.5	14.8	44.3	22.4	40.1	15. 6	46.5	19.8	44.8	21.4	42.9	16.4	40.1	14.7	42.5	23. 2

	37-1	. 41			Io	wa.							Kar	nsas.								Miss	ouri.			
Date.	Valer		Clari	inda.	Sib	ley.	Sioux	City.	Col	by.	Conce	ordia.	Sal	ina.	Top	eka.	Wak	eeney.	Colu	mbia.	Kar Ci	nsas ty.	St. I	∠ouis.		ion- lle. §§
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	37 40 49 46 17	14 10 26 17 4	54 36 47 48 53	26 16 16 24 22	54 26 50 52 28	35 4 4 23 26	56 29 52 50 40	21 9 28 31 13	51 50 53 56 44	32 18 23 24 6	60 40 55 51 52	31 21 32 29 19	56 48 54 46 40	40 21 31 25 20	57 40 50 53 57	35 26 34 29 21	53 46 55 60 51	36 12 25 25 25 19	64 43 47 54 64	42 27 29 31 25	57 39 45 51 59	36 26 33 34 21	59 58 53 56 66	48 35 32 44 33	54 28 40 50 58	36 22 16 26 35
6 7 8 9 10	36 44 28 50 38	2 19 7 22 15	25 46 18 47 40	12 12 12 7 12	31 44 20 40 43	- 6 - 1 - 4 - 3 20	29 45 16 47 37	16 1 12 17	45 44 40 55 44	12 18 22 20 27	38 52 34 58 45	15 25 15 17 28	41 55 38 55 46	14 19 25 20 28	35 52 41 47 44	19 25 16 14 33	39 53 45 57 52	13 19 26 17 26	31 48 37 41 46	20 24 13 11 33	33 50 40 42 44	20 26 16 14 35	33 48 41 38 51	24 28 17 14 30	28 45 18 38 40	18 16 18 8 14
11	17 52 54 58 43	5 7 20 26 26	20 30 49 57 48	12 2 0 22 23	9 29 48 51 42	$ \begin{array}{r} -2 \\ -3 \\ \hline 1 \\ \hline 21 \\ \hline 24 \\ \end{array} $	17 33 48 48 48	5 5 27 27 27 34	35 47 60 63 49	23 13 25 29 24	37 46 54 60 51	13 10 28 33 31	41 45 56 58 61	20 9 25 25 23	33 36 50 52 51	18 12 32 31 32	40 50 60 66 56	22 11 23 30 28	33 28 51 55 51	16 9 27 32 30	36 34 48 52 50	19 12 31 33 33	32 27 51 53 54	19 12 23 34 42	20 28 48 52 48	15 4 6 20 33
16 17 18 19	32 39 38	24 20 15 24 13	40 38 30 44 30	23 24 24 12 12	36 28 26 35 20	24 27 21 9 10	37 32 28 41 29	31 23 19 20 15	47 41 43 42 38	22 26 21 26 16	46 40 40 49 38	30 27 25 29 22	51 46 41 49 40	28 25 25 22 16	42 43 36 50 38	29 31 25 24 26	50 45 42 37 39	26 26 20 25 17	49 44 35 50 36	27 32 27 23 24	44 41 34 48 38	34 32 27 25 28	51 53 37 47 42	35 37 30 28 29	39 28 30 40 31	25 27 18 21 28
21		9 8 13 20 13	42 40 44 54 48	13 9 9 18 16	34 34 37 36	5 17 15 16	31 38 42 51 35	16 15 25 24 25	37 34 45 57 43	7 9 14 17 14	43 44 48 53 49	21 20 17 28 18	44 46 40 54 43	9 12 10 15 14	44 44 48 56 47	22 20 24 31 26	41 41 47 57 48	13 13 17 12 19	42 41 46 54 53	19 22 26 23 31	43 43 46 54 51	25 24 31 32 32	43 38 42 53 52	26 28 31 28 31	43 38 43 50 48	18 14 23 18 23
26 27 28 29 30	55 45 38 53	21 25 19 21 18	41 46 57 45 48 45	15 14 11 18 11 12	31 41 45 33 48 42	13 8 9 20 12 20	33 49 48 37 53 45	15 17 26 22 21 26	57 46 43 63 45	21 29 21 18 17	42 53 55 44 58 50	22 25 27 18 24 26	42 57 59 42 48 55	18 19 22 22 22 16 18	39 53 60 45 49 51	25 24 35 31 25 30	40 59 61 43 67 53	13 25 19 23 17 23	41 41 58 49 53 47	25 22 33 32 26 31	39 49 57 48 48 48	28 28 36 33 26 35	45 36 60 42 51 47	31 25 31 37 32 38	30 40 53 48 45 46	26 18 23 27 21 20
Mns	40.2	15.8	42.3	14.8	36.4a	12.2ª	39.3	19.0	47. 2a	19.8a	47.9	23.4	48.3	20.5	46.5	26.0	50.1	20.6	46. 2	25.5	45.5	27.9	47.1	30. 1	40.2	20.5

*, b, *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 7, LOWER MISSISSIPPI VALLEY.

ISAAC M. CLINE, District Editor.

GENERAL SUMMARY.

Moderate temperature conditions prevailed generally during the month. The precipitation was light and scattered, and there were no well-defined rainy periods, except that over Louisiana, southern Arkansas, and in the Mississippi and Tennessee areas rain occurred nearly every day and the amounts were heavy to excessive in most localities. The weather was too dry for agricultural interests, except over the southeastern portion of the district where the excessive rains interfered materially with all outdoor occupations.

The following table summarizes the chief features of meteorological interest in the various portions of the district.

	re.	the	ou.	the	pita-		Nu	m bei	r of d	lays.	di-
States and portions of States lying within District No. 7.	Mean temperature	Departure from normal.	Mean precipitation	Departure from normal.	Greatest precipita- tion in 24 hours.	Mean snowfall.	With 0.01 inch or more.	Clear.	Partly cloudy.	Cloudy.	Prevailing wind rection.
Colorado	26. 6 30. 4 38. 2 35. 5 39. 2 38. 2 40. 4 41. 7 45. 6	-2.6 -3.6 -1.8 +1.4 +0.4 +2.1 -0.2 -0.5 -1.3	0. 45 0. 23 1. 31 0. 43 0. 70 0. 71 3. 59 2. 63 9. 05	- 0.52 - 0.36 - 0.68 - 0.47 - 0.61 - 2.07 - 1.00 - 1.46 + 5.05	0.90 0.50 2.00 0.92 0.90 0.91 1.56 2.31 4.91	7.8 3.3 3.6 0.1 1.9 1.4 2.0 1.7	3 2 4 1 3 3 8 7	21 21 17 20 19 18 14 14 14	7 8 5 7 7 5 2 7 6	3 2 9 4 5 8 15 10 15	nw, sw. n. s. s. s. n. sw.

TEMPERATURE.

Mean temperatures ranged from 0.2° to 5.6° below the normal over the Colorado and New Mexico areas, and in the western and extreme eastern portions of the Texas area, southwestern and central-eastern Oklahoma, central southern Kansas, southern Arkansas, northern Louisiana, the northern portion of the Mississippi area, and the extreme southwestern portion of the Tennessee area; elsewhere there was an excess in mean temperature ranging from 0.2° to 4.2° . Below zero readings were reported only from the more elevated stations in the Colorado and New Mexico areas; elsewhere the lowest readings were well above zero, except that 1 station in Oklahoma reported a minimum temperature of zero. The highest temperature recorded, 90° , occurred at Reserve, La., and the lowest, -20° , at Elizabethtown, N. Mex. A minimum reading of -19° was reported from Westcliffe, Colo., and -16° from Lake Moraine, Colo.

PRECIPITATION BY DRAINAGE AREAS.

Arkansas River and tributaries.—There was less than the normal precipitation throughout this drainage area. Over the headwaters of the Arkansas River in Colorado, the average from 40 stations was 0.45 inch, about half the normal amount. The average from 43 stations in those portions of the Arkansas Valley proper that lie in Kansas and Oklahoma was 0.41 inch, about 0.5 inch below the normal. Over the headwaters of the Canadian River in New Mexico, the average from 38 stations was 0.21 inch, about 0.3 inch below the normal. In those portions of the Canadian Valley that lie in Texas and Oklahoma, the average from 30 stations was 0.56 inch, about 0.6 inch below normal. The average from 20 stations in the Cimarron Valley was 0.29 inch, about 0.4 inch below the normal. Over the Verdigris Valley, the average from 11 stations was 0.68 inch, about half the normal amount, and over the Neosho Valley the average from 18 stations was 0.61 inch, about 1.3 inches below the normal. Below the Oklahoma-Arkansas line, the average from 16 stations in the Arkansas Valley proper was 2.02 inches, about half the normal amount.

Red River and tributaries.—Less than the normal precipitation occurred over those portions of the Red River Valley that lie in New Mexico, Texas, and Oklahoma, the average from 46 stations being 1.08 inches, about half an inch less than the normal amount. Below the Texas-Arkansas line, the average from 20 stations was 7.81 inches, about 3.4 inches above the normal.

Mississippi River south of St. Louis and small tributaries.—The precipitation was below the normal in this drainage area, except in Mississippi, Louisiana, and at a few stations in southeastern Arkansas. Over the immediate Mississippi Valley the average from 38 stations was 5.26 inches, about 0.8 inch above the normal. The average from 23 stations in the Valley of the White was 0.96 inch, about 2.3 inches below the normal. Over the Yazoo Valley the average from 23 stations was 7.89 inches, about 3 inches above the normal. The average for the Valley of the Big Black was 10.04 inches, about 5.4 inches above the normal. The amounts from 15 stations in the Ouachita Valley averaged 4.18 inches, about 0.6 inch below the normal.

Louisiana coastal plain.—Heavy precipitation occurred over this drainage area, the average from 40 stations being 13.35 inches, about 9.3 inches above the normal.

SNOWFALL.

Snow occurred generally over the district, except over Louisiana, extreme southern Arkansas, the central and southern portions of the Mississippi area, the eastern portion of the Texas area, and in southeastern Oklahoma, but owing to the warm weather no snow remained on the ground at the close of the month, except in the more elevated portions of the Colorado and New Mexico areas. Over the Colorado area the snowfall was light and below the normal. In the new Mexico area very little snow occurred, and the depth stored in the mountains at the close of the month was insignificant. Generally speaking the prospects for irrigation water for the coming season are not good.

RIVERS.

All rivers in Oklahoma continued below the normal stage, and no decided changes were reported. In the Kansas area the rivers continued at low stages, and in Arkansas the Black, White, and Arkansas Rivers continued unusually low, and the Arkansas at Little Rock was not navigable at any time during the month.

Changes in the Mississippi below St. Louis were slight and unimportant and low stages prevailed generally. The Red River was low throughout the month and there were only slight changes in stage. Changes in the Ouachita were slight, generally, and the river remained at a low stage, except that there was a sharp rise at Camden from the 25th to 27th, when the highest stage of the month, 10.7 feet, was recorded.

DAM AND ELECTRIC POWER PLANT AT POWERSITE, MO.

By J. S. HAZEN, Local Forecaster, Springfield, Mo.

A dam and hydroelectric power plant is now nearing completion on the White River 8 miles below Hollister, Mo., which will conserve the waters of that stream and supply power for the adjacent territory. This power plant, while small as compared with the one at Keokuk, Iowa, is to be one of a series along the White River which will eventually utilize the entire resources of that stream. It is the first project of this character undertaken in that part of the State and marks an era of great development and economic importance to southwestern Missouri and northwestern Arkansas.

The White River flows in a southeasterly direction through the Ozark Mountains, with a crooked course and high grade. This condition gives many desirable sites for the contemplated series of dams. The three power plants now contemplated will be located within a radius of about 7 miles of Hollister.

The project is being financed by the Henry L. Doherty Co. and is incorporated as the Ozark Power & Water Co., with a capitalization of \$1,500,000. They contemplate eventually spending \$2,000,000 on the project. Power will be supplied to all cities within 150 miles of the centers, and lines of transmission with steel poles are almost completed to Springfield Carthage and Joplin Mo.

pleted to Springfield, Carthage, and Joplin, Mo.

The first of these plants will be completed in March or April, 1913. The dam at Powersite is of the Ambursen type, hollow construction, reenforced concrete, 52 feet high, 60 feet wide at the base, with a spillway 600 feet long, and the approaches are 700 feet in length. It is situated in a gorge of the White River, and when completed will raise the water level in the river 50 feet and create a lake nearly 20 miles long. No difficult engineering problems were encountered in the construction, as solid rock foundations were easily secured with a minimum of excavation. The land which will be inundated by the lake created has been secured by purchase and no delay in the turning on of the power is anticipated. The power house will be immediately below the dam and will have 8 penstocks, with 5 units of 2,250 kilowatts each. With a minimum flow of water during unusually dry seasons of 1,000 feet per second, a reservoir dam will be required, and work has already been started on that project. However, each dam will create such a vast reservoir that, while the White River is small (only about 600 feet wide at Powersite), it is confidently expected that the average annual precipitation of 44 inches over the 4,000 square miles of territory draining into the river above the dam will furnish an ample supply of water to tide over the driest periods.

Table 1.—Climatological data for December, 1912. District No. 7, Lower Mississippi Valley.

			years	Temp	perature	e, in c	legre	es Fah	renh	eit.	Pre	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy 0.01 inch or mo	Number of clear days.	Number of part-	Number of cloudy days.	Prevailing wind c	Observers.
Colorado.																				
uena Vista alhan	Chaffee El Paso Fremont El Paso Teller Huerfano Klowa Custer El Paso Chaffee Elbert	7,955 6,700 5,343 6,098 9,396 8,200 4,209 9,500 8,850 9,510 5,400	12 5 24 32 11 3 5 3 2 2 19	25.6 34.7	- 5.1 - 2.3 - 3.0 - 0.5	39 54 65 56 58 48	14 15	- 16 - 1 - 3 - 3 - 10 - 5 - 5	5† 6	38 36* 43 39 27 37	0. 27 0. 22 0. 14 0. 06 0. 29 0. 81 T. 1. 34 0. 22 1. 23 0. 07	- 0.18 - 0.30 - 0.20 - 0.17 - 0.34	0. 20 0. 10 0. 13 0. 05 0. 18 0. 73 T. 0. 84 0. 08 0. 42 0. 05	4.0 3.5 1.5 1.2 5.1 10.7 T. 19.0 3.4 19.8 1.0	2 4 2 2 4 2 0 4 4 8 8	18 24 29 22 26 20 13 19 22 22	5 8 15 10 2 4	6 1 1 1 0 3 3 2 7 5	nw. sw. n. n. sw. n. e. w. w.	C. A. Short, H. B. Rice. U. S. Weather Bureau. Colorado College. F. G. Willis, George A. Mayes. Mrs. Mattle A. Kerr. Elizabeth L. Grey. U. S. Forest Service. Lloyd N. Felton.
lamps Hermit Lake Hoehne (near) Holly Aske Moraine Asmar As Animas	Custer Las Animas Prowers El Paso Prowers Bent Costilla Lake Elbert	5 700	20 17 18 -22 44	30. 9 29. 9 18. 3	- 0.3 - 1.9	64 64 43 62	14 14 13 30	- 7 - 2 - 16 5	6 21 6	51 54d 35 50	1. 45 0. 31 0. 03 0. 38 T.	- 0.39 - 0.37 - 0.32 - 0.60	0.57 0.21 0.03 0.25 T.	25. 0 4. 0 0. 5 10. 5 T.	2 5 2 1 6 0	22 20 18 26 16 28	8 7* 10 3	3 5a 0d 5	sw. w. n. sw. ne.	W. Hamp. John E. Graham. S. W. De Busk. Holly Sugar Co. Clyde C. McReynolds. J. T. Lawless. F. M. Tague.
fadrid	Costilla Lake. Elbert Las Animas. Saguache. Baca. El Paso.	6,361 10,846	16 5 2 9	26.3	- 5.6		14	- 14 - 2	22 6	36 45 53	1. 11 0. 81 0. 20 0. 26 1. 51 0. 10 1. 46	- 0.23	0.82 0.28 0.20 0.21 0.31 0.10 0.90	17.5 13.4 3.0 7.5 15.0 1.5 18.0	2 8 1 3 7 1 3	26 14 25 14 22 22	5 11 4 3 8 5	0 6 2 14 1 4	n. n. nw. w,	F. M. Tague. Clara M. Wr.ght. U. S. Weather Bureau. F. L. Palmer. Thos. Sewers. W. L. Williams. L. H. Alberti. U. S. Forest Service.
fonument	Las Animas Pueblo Otero Chaffeedo Huerfano	7,200 8,700 4,734 4,177 9,500 7,035 8,252	1 20 24 23 3 13 17	31. 2 30. 3 21. 8 25. 8	- 0.5 - 0.3 - 5.0 - 1.4	70 66 64 53 54	14 14 14 14 14	1 1 1 - 13 - 7	21 21 26 6	45 50b 55 38	0. 23 0. 02 0. 00 0. 72 0. 32 0. 90	- 1.36 - 0.44 - 0.44 - 0.27 - 0.84	0. 12 0. 02 0. 00 0. 29 0. 25 0. 70	4.0 0.3 0.0 12.0 4.0 19.7	3 1 0 5 2 4	22 25 23 28 22 30 22	3 8 3 4 1 9	3 0 0 5 0 0	nw. nw. w. sw. nw.	James W. Ingmire. U. S. Weather Bureau. P. K. Blinn. Daniel Clark. M. D. L. Buell. Lincoln G. Morris.
heridan Laketonewallrinidadwo Butteswo Buttes Reservoir		4,065 8,000 5,994 4,100	10 6 16 1	30.8		67	14 4	- 3 6	6† 21	48	T. 0.52 0.07 0.06	- 0.06	T. 0. 43 0. 07 0. 06	T, 10.5 0.8 1.0	0 3 1 1	16 21 14 26	4 10 17 2	11 0 0 3	w. w. nw. nw.	Howard Gamble. G. A. Storz. Walter Dearden. N. G. Jones. Two Buttes Irrigation Reservoir Co.
ictor	Teller Baca El Paso Custer Chaffee El Paso Lake	3,935 7,864 9,765	8 21 1 18 2	18.6 29.8		46	3 14	- 19 1	26	35* 581 41°	0.40	- 0.49 - 0.19 - 2.74	0. 14 0. 00 T. 0. 35 0. 20 0. 53 0. 20	4.2 0.0 T. 10.0 9.4 9.0 26.0	8 1 10	24° 26° 22° 15° 13° 27° 4	8 6h 9	1 1 2h 9	nw. sw. nw. w. nw.	Fred Jones. David Konkel. J. C. Groff. Zack Jordan. John G. Payne. Woodman Sanatorium. George C. Wortman.
New Mexico.	Lake	11,200	**		•••••						1.20	2.14	0.20	20.0	10		14	1.0		deage C. Wortham
bbott lbert urora lbert urora ell Ranch laek Lake abeza ampana hacom imarron (near) lovis uervo awson lizabethtown losom olsom olsom ort Union ayden loosier Ranch ohnsons Park ohnsons Ranch appus ake Alice ogan ykins (near) laxwell (near) leirose isami Ranch ilist (near) ontoya oontoya oontoya oont orde ara Visa ara Visa ara Visa ara Visa ara Verde	Mora. Uniom Colfax. San Miguel Colfax. San Miguel . Colfax. Colfax. Curry. Guadalupe Colfax . Uniom Mora. Uniom Mora. Uniom Mora. Uniom Mora. Quay Colfax Quay Colfax Quay Colfax Quay Roosevelt Colfax Quay Roosevelt Colfax Mora. Quay Roosevelt Colfax Uniom Mora. Quay Roosevelt Union Union	5,771 4,700 8,849 4,500 8,348 5,406 4,493 9,000 6,385 4,129 4,849 6,396 8,465 6,835 4,444 6,722 5,784 4,010 7,160	3 222 3 3 3 3 3 3 3 3 3 3 3 7 12 5 2 2 1 1 3 3 6 6 2 5 5 4 4 1 1 3 1 6 6 1	34. 1 35. 1 28. 6 35. 0 36. 0 29. 0 17. 1 29. 4 27. 4 33. 4	- 6.0	75 64 64 67 62 60 56 65 59 65 65	14 3 15 14 4† 14 14 14 11 14 11 14	- 6 - 20 - 1 - 9 2	7 23 6† 7 11 7 21 7 21	52 54 42 53 45 30 42 52 46 47 45	0.25	- 0.62 - 0.32	0.09 0.06 0.20 0.10 0.02 0.09 0.16 0.22 0.09 T. 0.20 0.50	2.0 7.5 3.0 2.0 5.2 5.7 2.5 5.7 2.5 2.5 3.0 3.5 2.5 3.0 3.5 3.5 3.0 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	1 1 1 4 1 1 2 2 2 2 2 2 1 1 2 2 2 2 1 1 2 2 2 4 4 2 2 1 1 1 1	26 9 16 22 28 7 23 23 27 9 22 28 25 18 25 25 29 10 29 25 24 24 24 24 25 25 26 27 27 28 28 29 20 20 20 20 20 20 20 20 20 20	8 2 2 24 5 0 0 0 111 8 3 2 2 12 4 6 6 2 2 17 7 0 1 1	3 1 4 1 1 0 0 3 3 8 4 4 11 1 1 0 0 0 0 0 2 5 5	S. W. SW. W. W. W. W. W. SW. SW. SW. SW.	Agent E. P. & S. W. R. R. Martin De Smet. Miss J. Lasero. C. M. O'Donel. Ralph T. Martinez. Agent E. P. & S. W. R. I. Do. Alfred Lucero. William French. John H. Barry. Agent E. P. & S. W. R. I. Do. Miss M. Carrington, David Rope. M. C. Needham. J. B. Dickson. W. H. Guthman. A. J. Meloche, Jr. J. W. Johnson. A. Kappus. Jesse Rickman. John B. Reneau. J. G. Buchanan. D. N. Jackson. Dr. B. M. Porter. Farmers Development C. J. E. La Rue. Agent E. P. & S. W. R. I. E. F. Grygla. Willard Belknap. G. R. Abernathy.
asamonteleasant Viewortales	Mora	4,004 6,660	3 1 2 14	29. 2	- 2.5	65	15	3	21†	44	0. 16 0. 22 T.	- 0.14	0. 16 0. 20 T.	2.0 2.0 T.	1 2	27 27 20	8	4 0 3	w.	J. J. Heringa. R. W. Boulware. Portales Irrigation Co. Humphrey & Wiseman.
exico (near)	Union Morado. Curry Quay Mora. Colfaxdo.	8, 200 4, 500 5, 884 5, 880 4, 300 4, 200 5, 622 5, 857 5, 661 4, 038	8 1 3 1 5 3 20 3	34.5 31.0 25.4 30.4	- 6.2	63	14 14 14 13	- 11 - 1 - 1 - 16 10	7 7 7 22	47 46 52 40	0. 65 0. 23 0. 15 0. 70 0. 47 0. 30 0. 18 0. 15 0. 50		0. 24 0. 23 0. 15 0. 47 0. 40 0. 20 0. 12 0. 14 0. 25	9.5 2.0 1.5 8.0 5.5 4.0 3.0 2.1 6.0	2 2 2 2	14 5 21 24 28 24 26	17 10 5 1 7 0		w. ne. sw. sw. sw. ne.	J. Ernest Dailey. H. A. Nachtrieb. Agent E. P. & S. W. R. Baum Bros. S. A. Dow. Jesse T. White. F. M. Hughes. Agent A. T. & S. F. R. I Agent E. P. & S. W. R. A. L. King. Miss Alice Blake.
rementina	Quay Uniondo	5,000 4,194 5,000 7,600	7 7 1 7	37.0			14	6		48	0. 27 0. 13 0. 04 0. 06			1.0 1.0	1	13 25 26 18 23	3	5 4 2 1	sw.	John F. Seaman. Miss M. L. Payne. C. E. Anderson. H. W. Adams.

TABLE 1.—Climatological data for December, 1912. District No. 7—Continued.

			years	Temp	erature	, in d	egree	s Fah	renh	eit.	Prec	ipitation	, in in	- 1	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	snowfall, nelted.	of rainy	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o r cloudy days.	Prevailing wind d	Observers.
Texas.																				
marillo		3,676	20	33.6	-2.8	66	14	9	24	40	1.18	+0.35	0.70	11.4	4	24 18	5	2 2	sw. nw.	U.S. Weather Bureau. Charles H. Thurman.
Arthur City	Lamar	590	20						10	34	T.	-2.54	T.	0	0					C. A. Lowrey.
onham	Fannin	566	9 5	43.5 36.8		68	5 2	25 10	13 20	44	1.78		1.07 0.05	0.5	5	10 21d	2 2d	19 4d	sw. nw.	H. M. Norman. J. M. Shaw.
hildress	Childress	1,869	19								0.10	-0.49	0.10	1.0	1	18	6	7	n.	George Baker.
	Hardeman Donley		7	35.7		68	14	7	24	40	0.64		0.30	3.0 6.5	3	14	14	3	nw.	A. B. Connor. Whitfield Carhart.
larksville	Red River	442	12		+1.7	730		25	13	32	3.70	-1.71	1.52	0	6	3h	4h	16h		J. W. O'Neill.
laude	Armstrong Dallam	3,397	7	32.0		66	30	· · · · i	21	53	1.05		1.00	6.5	1					Ft. W.&D. C. Ry. W. D. Griggs.
Denison	Grayson		12								1.70	-0.47	0.65	0.4	6	11	0	20	n.	J. L. Wilson.
Inley	Bowie	915	20	43.8	+0.5	71	1	. 20	24	36	3.55 0.64	-0.39	2.00	1.5	3	15	0	16		Robert L. Smith. C. K. Brown.
femphis	Hall	2,067	7	42.8		67	11	22	23 21	24 45	0.20		0.20	2.0	1	130	60	90	n.	Ft. W. & D. C. Ry.
chiltree	Roberts Ochiltree	2,743	6 4	36.4		65	14†	10	21	40	0.63		0.30	5.5	3	21	8	2	n.	J. E. Kinney. S. J. Allen.
anhandle	Carson	3,450	3						194	24	0.90		0.60	9.0	8	25	2	4		J. Sid O'Keefe.
	Lamar		23	42.6 32.6	-3.8	72 70	14	24	21		2.32 T.	-0.06	1.15 T.	T.	0		3 4	18	n. n.	Robert A. Miller. C. S. Solomon.
uanah	Hardeman	1,563	10	39.8			31	23	71			-0.44	0.45	2.5	6	21	3	7	n.	William H. Crawford.
lomero	Hopkins Hartley		2 2	34.5		67	14	2	21		0.50		1.40	6.5	1	13 23	6	17	S.	H. J. Palmer. R. S. Chamberlain.
herman	Grayson	745	19	44.2	-2.3	68	1	29	71		0.74	-1.06	0.45	T.	2	10	4	17	S.	R. A. Gibbs.
	Sherman Dallam	4,964	7	33.0			19	6	21		0.00		0.00	0	0	23	7	1	n.	J. W. Elliott. Ft. W. & D. C. Ry.
ulia	Swisher	3,501	14	33.8	-4.0	68	14	4	7†		1.07 0.78	+0.06	0.50	8.0	3	25	3	3	SW.	Lou Mulhall. J. D. Camp.
Veilington Vichita Falls	Collingsworth Wichita		20								0.10		0.40	6.0		****		****		E. F. Mittmann.
Vinfield	Titus		2								3.92		1.75	0	6	10	9	12	nw.	J. B. Newberry.
Kansas.			1																	
	Rice		2								0.22		0.22	T.	1	26	3	2	nw.	Geo. Klady.
nthony	Harper	1,329	15 24	37.6	- 0.3	69	3 4	17	24	38	0.59	- 0.26 - 0.60	0.41	0	1	20 26	7 5	0	sw.	R. H. Beebe. C. W. Carson.
Jurlington	Coffey	1,010	19	35.6	+ 1.4	57	14	11	9	35	0.55	- 0.80	0.35	0	2	1	25	- 5	S.	O. E. Sanford.
hanuteimarron	Neosho	2,700	8			59 67	30	13 9†	9 7	37 55°	0.05		0.92	T. 0.5	1	184	21 4e	4 2≈	sw.	C. W. Brown. C. C. Isely.
offeyville	Montgomery	747	2			64	5				1.03		0.56	0.5	3	16	9	6	S.	A. F. Briggs.
oldwater	Comanche Cherokee	2,090	15 22	36.4	+ 1.4 + 0.7	63	15	12 13	7 9	33		-0.57 -1.97	0.11	0.3	1 3	27 20	4 3	8	n. sw.	J. L. Stanley. O. E. Skinner.
coolidge	Hamilton	3,348	15	30.6	+0.7	66	4	1	21	56	0	-0.29	0.00	0	0	21	10	0	nw.	W. R. Padley.
ouncil Grove	Chase		8			58	1	12 11	9	35	0.95		0.70	T.	2 2	214	3a 4b	6a 2b	n. s.	E. B. Greene. J. P. Blackledge.
unningham	Kingman	1,680	28	35.9	+ 1.2	60	3+	14	23	40	0.40	-0.30	0.40	0	1	20	7	4	8.	W. H. Morton.
Oodge City Il Dorado			38		+ 3.0	66 58	14	13 13	23 21	43	0.81	- 0.56	T. 0.57	T.	0 2	23 22	8 7	0	nw.	U. S. Weather Bureau W. Y. Miller.
Ellinwood	Barton	1,790	37	35.4	+2.9	67	14	10	21	47	0.10	-0.61	0.10	T.	1	13	17	2	nw.	Martin Musil.
Imporia	Lyon	1,138	31 16	36.0	+ 2.5	61	1	14 12	12 21	33	0.53	- 0.56 - 0.06	0.27	T.	3	22	3 7	6 2	sw.	W. H. Boyles. Mrs. T. C. Peffer.
all River	do	925	16	37.0	+ 2.0	61	1	12	91		0.45	- 0.37	0.35	T.	2	24	5	2	3.	J. McDaniel.
argoredonia			9	37.0		59	1+	15	9	32	0.71		0.45	T.	0	29	2	0 7	nw.	N. B. Swink. B. W. Holmes.
arden City	Finney	2,836	23	33.0	+ 1.4		30	4	21		0.05	- 0.57	0.05	0.5	1	19	11	1	n.	B. F. Stocks.
reat Bend	Barton Kiowa	1,850 2,235	3 5	36.6		64	14	15	61	44	0.06		0.06	T.	1	21 29	8	2 2	SW.	I. Pritchard. C. C. Raymond.
renola	Elk			37.4	+ 2.6		1	13	9		0.86				2	21	5	5	SW.	W. H. Lawyer.
less loward	Gray	1,112	5	36.6		61	1	13	9	34	0.61		0.61	T.	1	22	1	8	n.	J. W. Eby.
Iutchinson	Reno	1,535	22	33.9	- 1.1	65	4	10	21	30	0.36	- 0.55 - 1.02	0.36	T.	1	24	1	6	SW.	Sheridan Ploughe.
ndependenceola	Montgomery	800 984	38		+2.5 + 3.1	61 58	1	15 13	91	34 35	0.91	-1.02 -0.42	0.76	0.2	3	21 19	8	5	S. S.	F. L. Kenoyer. U. S. Weather Bureau
rene	Hamilton	3,440	2	32.2		67	5	1	24	56	0.02		0.02	0.2	1	22	8	1	nw.	N. M. Herbig.
etmore		2, 268 1, 504	11 4	36.74		68	28	8 10	21 21	47 35s	T. 0.22	- 0.49	T. 0.22	T.	0	12	18	1	nw.	B. B. Anawalt.
a Crosse	Rush	2,061	10	34.5		67	13	8	12	49	T.	- 0.46	T.	T.	0	17	10	4	SW.	Rodney Torrey. C. H. Longstreth.
akinarned		2,993	22	31.4	- 0.1	66	30	10	6		T.	-0.48 -0.80	T.	T.	0	24	7 7	0	nw.	C. H. Longstreth. H. H. Wolcott.
ebo	Coffey	1, 138	27 26	34.8	+ 0.8	58	1	14	91		0.64	- 0.64	0.34	0	2	20 22	5	6	S.	I I Rowman
e Royiberal			3 5	34.8		70	14	9	24	52	0.52 T.		0. 24 T.	Т.	3	22 20	3 5	6	nw.	F. W. Schmitt. Dr. R. T.Nichols. Mrs. Nelia Poling. Ed. F. Haberlein. C. A. David.
lacksville	Stafford	2,032	23	34.3	- 0.7 + 2.1	59	13	8	21	43	0.03	- 0.49	0.03	T.	1	19	11	1	nw.	Mrs. Nelia Poling.
cPherson	McPherson Greenwood		23 11	35.2	+ 2.1	62	1	16	121		0.43	- 0.46 - 0.21	0.43	0	1 2	17 17	7 8	6	nw.	C. A. David.
farion	Marion	1,310	19	35.8	-0.6 + 2.4	58	1	15	91	35	0.87	- 0.21 - 0.01	0.80	T.	3	19	8	1	S.	Jerry Forney.
ledicine Lodge lianeola			19	35.6	+ 1.2	62	28	12	21	43	0.38 T.	-0.35	0.34 T.	T.	0	23 23	8 7	0	s. nw.	S. P. Garrison. A. P. Reece.
ount Hope	Sedgwick	1,410	15								0.60	- 0.26	0.58	0	2	23	5	3	S.	S. P. Garrison. A. P. Reece. H. N. Renfrew.
eosho Rapids ess City			19								0.94		0.64	0	3	21	2ª	7ª	se.	W. H. McMullin. J. K. Barnd.
ewton	Harvey	1,454	15	36.0	+ 2.7 + 0.6	63	3	15	21		0.92	+ 0.23	0.89	0	2	20	8	3	sw.	H. A. Brush.
orwichswego			16 18	37.0 37.5	+0.6 + 0.1	63	1	19 12	9		0.75	- 0.04 - 1.65	0.75	T.	1 2	21 18	8	5	nw.	N. I. Farris.
lains	Meade	2,766	2	33.8		70	14	8	71	53	0.00		0.00	0	0	23	8	0		Jas. M. Currigan. E. J. Henning.
rattichfield	Pratt	1,950	17	36.0 33.6	+ 1.5	62	10† 14†	15 6	21	35 52	0. 18 T.	- 0.16	0.18 T.	0	1 0	21	5	5	n.	E. J. Henning. T. J. Arnold. M. J. Allen.
ome	Sumner	1,218	26	36.7	- 0.4 - 0.4 + 1.8	62	1	15	22	34	0.64	- 0.66 - 0.37	0.64	0	1	18		8b	3.	D. M. Adams.
edan	Chautauqua	834	27 15	37.8	+ 1.8	63	1	13 10	91	33	0.85	- 0.66	0.58	3.0	3	25	4	6	n.	A. Y. Buckles.
lysses	Grant	3,050	21	36.8	+ 0.3	66	14	3	21	54	0.33 T.	- 1.14 - 0.58	0.33 T.	T.	0	25 25 16	12	6	n. nw.	M. A. Webb. T. W. Marshall. R. C. Harlan.
alnut	Crawford	940	10	36.4	+ 4.1 + 0.3 + 0.6 + 2.2 + 2.0	57	15	14	10	32	0.74	- 0.58 - 1.14 - 0.21 + 0.06	0.56	0	3	210	6ª	3*	SW.	R. C. Harlan.
Vellington	Sedgwick	1,377	16 25	37. 2 36. 2	+ 2.2	63 59	1	12 19	21†	31	0.89	+ 0.06	0.72	0	3 2	23	3	5 8	8.	E. O. G. Kelly. U. S. Weather Bureau M. B. Light.
Vinfield	Cowley	1, 124	18	38.0	+ 4.2	63	1	12	9	31	0.67	- 0.31 - 0.99	0.47	T.	2	25	4	2		

Table 1.—Climatological data for December, 1912. District No. 7—Continued.

	-		years	Tem	perature	, in o	degre	es Fal	rent	neit.	Pre	dpitation	, in in	ches.	days,	1	Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeited.	Number of rainy 0.01 inch or mo	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	Prevailing wind tion.	Observers.
Oklahoma.																				
dalva	Woods	1,350	7 2	41.3 37.6		61	1	18 14	24	33	1.32 0.35		0.48 0.20	5.0	4 2	15 19	8	8	s. n.	W. S. Creveling. S. A. Stech.
Arapaho	Custer	1,255 1,575	18	39.2	+ 1.5	66	1	13 12	24 24	41 39	0.84	- 0.05	0.52	2.0	4	18 29	11 2	0	nw.	G. D. Teeter. J. C. Brower.
rdinore	Carter	872 687	10	43.5	+ 1.1	70	1	22	24	37 33	1.39	- 0.34	0.75	3.0	5 3	17	4	10	n.	H. T. Nisbett.
Beaver	Beaver	2,500	15	40. 2 34. 5	- 0.4	64 65	1 4	17	8 21	43	0.84	- 0.58	0.57	2.0	0	25 27	3	1	sw. n.	Dr. A. P. Owens. W. C. Frazer.
lackburnache	Pawnee	800 1,350	10	38 1		67	1	13	12+	41	0. 10		0.10	Т.	· · · · ·	19	7	2	n.	M. M. Rhodes. Mrs. Frank Rush.
alvin	Hughes	713	7						121		1.77		0.80	6.0	4	18	0	13	S.	Thomas Purcell.
handlerhattanooga		865 1,150	10	40.2		71	7	11	21	41	1.20	*******	0.76	3.0	3	20	5	6	S.	. Chas. L. Kern. Squire Humble.
hickasha	Grady	1,091	10	40.3	- 0.1	68	1	14	24	40	0.82	+ 0.06	0.43	2.0	3 4	25	3	3	n.	J. C. Good.
loud Chief	Washita	1,400	10	39.4	+ 0.2	69	3	15	7	42	0.89	- 0.33	0.49	3.3	4	20	7	4	S.	J. P. Stutzman. W. W. Blackburn.
urant	Bryan	643	10	42.0	- 0.5	68	1	24	13†	30	1.64	- 0.32	0.76	1.0	7	11	9	11	ne.	Nelson Houk.
ldoradolk City	Beckham	1,456	5	39.8		65		19		371	0.94		0.62	1.7	4	21	7	3	nw.	T. W. Lanham. R. J. Carlile.
l Reno	Canadian	1,400 1,269	20	40.9	± 4 9	ge.		10		20	0.00	+ 0.36	0.00	0.0		99				. Rose E. Walker. Uri B. Worcester.
rick	Beckham	2,058	10	38.7	+ 4.2	65 70	14	19 11	6 24	36 53	0.40	+ 0.36	0.65	0.2 3.0	3	23 23	7 6	2	S. S.	A. W. Hanes.
ufaulaairland.	McIntosh	566 839	12	39.2	+ 2.5	65 62	5	15	9	38a 33	0.75	- 1.43	0.43	3.0 T.	4 2	17*	7a 11	60	8.	R. Uhl Brown. C. W. Prier.
ort Gibson	. Muskogee	556	7					15				- 1.43	0.27 0.31	2.9	4	18	1	12	S. 80.	John T. Welsh.
rederickeary		1,293 1,546	5	41. 4 39. 2		68 61	1	18 18	12 22	32	0. 57		0.20	2.5	5	17	8 6	6	nw.	B. B. Bradley. O. P. Ruth.
oodwell	Texas	3,300	1	35.6		65	30	9	23	49	T.	*******	0. 46 T.	1.0 T.	0	21 27	1	3	8.	S. W. Black.
uthrie uvmon		1,000 3,133	19	39.7	+ 0.2	67	1	16	7	39		- 0.45	0.50	0.5	3	20 23	3 7	8	S. S.	S. E. Snyder. A. L. Mordt.
artshorne	Pittsburg	700	13	43.2	+ 4.3	67	5	16	24	38	0.66	- 1.36	0.36	2.0	4	18	5	8	p.	Frank Webber.
ealdtonelena		900 1,396	18	41. 6 38. 9	- 0.4	72 68	1 2	11 18	24 22	50 42	1.15		0.65	2.0	3	11 16	14	6	n. n.	C. H. Heald. J. G. McCall.
ennessey	Kingfisher	1.166	17	39.8	+ 0.5	64	1	21	2	37	0.74	- 0.32	0.50	1.0	3	13	13	1	S.	Mrs. M. C. Parks.
obartoldenville		1,396	9	40. 4		64	16†	18	24†	43	1.04		0.64	2.2	4	15	13	3	n.	J. M. McCall. Eula L. Rutherford.
ooker	Texas	3,038	6	34.0		69	14	4	21	53	T.		T.	T.	0	21	2	8	n.	H. N. Kelly.
urleylabel		4, 200 474	3	32.2		60		6		48 i	T.		T.	T.	0	16	14	1	sw.	Dr. C. W. Meyers. M. L. Henderson.
fferson	Grant	1,062	18	37.4	+ 0.6	64	1	15	22	38		+ 0.09	0.77	0	2	22	4	5	S.	T. E. Beck.
entoningfisher		4,000 1,046	11 15	32.2	- 3.3	67	14	0	21	55	0.05	- 0.29	0.05	0.5	1	19	11	1	n.	Wm. H. Guy. J. C. Cross.
awton	Comanche	1,111		41.1		65	1	13	17	43	1.21		0.61	2.5	3	20	10	1	n.	F. C. Davis.
cAlesterangum		698 1,585	15 19	38.6	- 3.4	65	1 1	20 16	24	33		- 1.18 - 0.33	0.90	7.0	3	18	1 7	12 10	n. ne.	Wm. Noble. F. D. Dodson.
arlow	Stephens	1,292	11	39.8	- 0.5	61	17	17	24	36	0.76	- 0.18	0.34	4.0	3	17	11	3	n.	Wm. B. Anthony.
ay leeker		1,030	18	35.3	- 1.0	69	15	5 17	21 6†	55 34	0.25	- 1.08	T. 0.15	T. 1.5	0 2	26 21	0 3	5	n. s.	G. C. Gray. Dr. J. H. Baugh.
uskogee	Muskogee	614	13	40.9	-1.0 -0.8	64	1	18	9	37	0.45	- 1.45	0.25	2.0	2	17	6	8	n.	J. Harry Randall.
eola		1,500	6	37.0		68 66	14	12	21†	48	0.00	*******	$0.00 \\ 0.22$	2.5	0	28 16	1 13	2 2	S. 98.	Thos. Martin. R. N. Schooling.
ewkirk		1,149	14		+ 1.2	60 66	1†	18	27	30	0.40	- 0.55	0.40	T.	1	23	4	6	8.	P. H. Albright & Co.
ormanorth Muskogee	Muskogee	1,171	17	39.4	- 0.3		1	16	24	39	0.62	- 0.30	0.61	3.0	3	17	8	14	S. S.	S. E. Boyd. J. E. Walker.
akwoodkeene	Dewey	1,854 1,194	7	37.2 37.6		60	1	12 18	7	48 35	0.83		0.62	1.0	3	20 22	7 9	4	n. s.	Dr. F. P. Osborn. Dr. L. H. Murdock.
kemah	Okfuskee			40.4		65	2	20	8	39	0.75		0.40	3.5	2	23	0	8	n.	S. F. Smith.
klahomakmulgee		1,247 752	22	39.0	+ 0.4	65	1 14	21 14	21 24	33 44	0.62	- 1.12	0.32	1.6	5	15 21	11 6	5	8.	U. S. Weather Bureau
auls Valley	Garvin	880	11	39.4	- 2.2	68	1	10	24	42	1. 21	- 0.08	0.59	1.0	3	10	18	3	S.	A. M. Foss.
awhuskaerry		918 920	11 13	40.7	+2.5 + 1.9	69 65	1	15 18	91	30	0.20	- 1.23 - 0.72	0.18	0. 2 9. 3	2 2 3	20	10 9	1	n. s.	R. C. Block. S. E. Laird.
ankin	Roger Mills	2,200	8	37.0		67	14	6	21	476	0.37		0.20	0.7		21 24	6	1	S.	Roy Kagay.
aviaac and Fox Agency	Lincoln	796 900	18	40.8	+ 1.5	69 67		14 16		46b 35a	1.53 0.55	- 1.43	0.75	3.0 0.8	4	19*		11a 2a		R. G. Guptill. Thos. P. Myers.
hawnee	Pottawatomie	1,041	10	38.4	- 1.2	68	1	19	9	37	0.89	- 0.15	0.47	2.5	4	14	14	3	sw.	Mrs Kate Chatman
nydertillwater	Payne	1,356 880	19	40. 2 39. 0	+ 0.2	67 62	1	14	24	40	0.44	- 0.39	0.23	1.0	3	18 20	8 8	3	n. n.	Dr. W. C. Woodard. Will P. Watson. Dr. H. M. Hutchinson
ulsa	Tulsa	700	23	40.6		64	î	8 17	7 9	35	0.67	- 1.02	0.39	0.5	5	19	10	2	8.	Dr. H. M. Hutchinson W. C. Chamberlain.
inita agoner	Wagoner	698 588	8 15	39.6	+ 1.1	64	1	15	9	36		- 0.69	0.45	3.0	2	17	8	6	8.	Moro Hatfield.
aukomis	Garfield	1,258	15	39.1	+ 0.7	65	1	15 17 17 20 17	7	34	0.83	+ 0.04	0.63	1.0	3	19	12	0	nw.	R. C. Shades. B. A. Swindler.
aurikaeatherford	Custer	988 1,639	10	42.2 39.6	+ 1.2 + 0.2	70 64	1	20	24 7†	42 35	1.48	+ 0.67	0.75	4.0	6	14 14	7 13	10	S. SW.	Eugene Forbes.
ebbers Falls	Muskogee	479 945	13	40.4	+ 0.2	65 66	1	17	27	37 37	0.85	- 1.36	0.50	3.0	3	5 27	19	7	W.	B. D. Boulineau. John F. De Jarnette.
oodward	Woodward	1,893	8 9	39. 4 38. 1		70	15	17 12	21+	51	0.07		0.33	0.2	3	26	5	0	S. S.	R. A. Boyle.
yandotte	Ottawa												0.30	0	1	16	0	15	W.	Henry Hicks.
Missouri.	Maries		21	37.8=	+ 3.8	68	20	9	12	43	т	- 2.27	T.	0	0	140	74	3=	S.	A, J. Wofford.
rchtree	Shannon	1,200	20	36.7	+ 0.9	58	28	11	9	36	0.71	- 2.27 - 1.91	0.40	0	3	23	3	5	8.	V. H. Kirkendall.
ape Girardeau	Cape Girardeau	346	5 2	40.2		70	1	10	13	38	1.26		0.80	2.0 0.3	6	21 17	9	6 5	S. S.	D. L. Albert. E. M. Perry.
aruthersville	. Pemiscot		23	41.2	+ 1.6	66	5	15	13	34	2.36	- 1.86	0.91	6.0	6	16	4	11	0.	H. E. Averill.
assville ean	Barry		14	36.4 37.3	- 0.7	60 65	1 5	10	22	40	0.27	- 1.77	0.18	0	3	20 22	2 2 5	9 7 7	8. W.	Mrs. Zuma Bloomer. E. H. Dean.
oniphan	Ripley	440	9	37.7		66	5	10	24	38	1.25		0.52	0.3	6	19	5	7	nw.	W. W. Martin. A. C. Leech.
anooodland	Dent		10 8	38.7 36.2	+ 2.7	72 67	5 5	8	9	34 44	0.63 0.35	- 1.09	0.51	T.	3 2	22 22	3 4	6 5	8. n.	A. C. Leech. F. M. Adams.
ollister	Tanev	1,000	3	40.6		70	5	12	91	44	0.30		0.30	0	1	22	0	9 7	SW.	W. P. Chapmann.
onton	Iron Cape Girardeau	925 458	35 22	36. 1 39. 3	+1.8 + 2.8	63 65	5 5	9 7	9 24	45 34	0.89	- 2.12 - 2.73 - 2.05	0.60	T. 3.0	3	16 13	8 5	7 13	n. 8.	W. H. Delano. L. M. Bean.
opim	Jasper	979	34	39.4	+ 2.8 + 1.2 + 2.3	63	5	16	9	36	0.25	- 2.05	0.25	T.	i	16	6.	60	nw.	Joplin High School.
oshkonong	Oregon	911 964	13	39.6 37.2	+ 2.3 + 1.8	68	5 15	13 12	9	37	1.26	- 1.91 - 1.64	0.64	3.0	5 2	16	8	7 9	nw.	J. W. Hitt. E. H. Adams.

TABLE 1 .- Crimatological data for December, 1912. District No. -Continued.

			year	Tem	perature	, in (degre	es Fah	renh	eit.	Pre	cipitation	ı, in in		days,		Sky.		direc	
Stations.	Countles.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeited.	Number of rainy da 0.01 inch or more	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind tion.	Observers.
Missouri-Continued.																				
Marble Hill. Mountsingrove. Mount Vernon Neosho. New Madrid Dakfield Diden Colla Springfield.	Newton New Madrid Franklin Howell	420 1, 490 1, 490 1, 023 285 793 1, 246 1, 139 1, 350	21 14 35 30 19 21 23 32 24	38.5 37.6 38.2 39.2 38.8 38.0	+ 0.9 + 3.9 + 0.8 + 1.7 + 4.6 + 1.8 + 5.0 + 1.1	65 65 65 64 69 70 59 63	5 5 5 1 5	10 10 12 12 12 12 11 9 11 9	9† 9† 9† 9† 12 9† 9† 9	40 33 38 38 45	0.43 0.12 0.16	- 2.30 - 2.09 - 2.41	0.50 0.52 0.28 0.47 0.62 0.22 0.12 0.08 0.13	0. 2 0 0 4. 5 0. 3 0 T. T.	2 2 6 2	19a 12 12m 20 19 18 17 21 18	9	4° 10 5° 11 11 6 6 6 7 9	nw.	A. F. Hendrix, Mo. Fruit Exp. Station, J. R. White & Son. W. O. Buck. Miss Josie Smith. E. E. Steines. J. D. Evans. Prof. P. J. Wilkins. U. S. Weather Bureau.
Kentucky.	Ballard	445	31	39.4	+ 2.6	64	5	15	9	31	2.14	- 1.81	0.71	5.2	9	17	2	12	nw.	E. W. Horr.
Tennessee.																				
Union City	Haywood Tipton Dyer Madison Obion Shelby	450 361 311 310 450 325 409 440 345 360	30 25 27 25 29 19 10 41 29 29 14	39.8 41.4 39.5 42.0 39.6 43.1 38.8	+ 1.3 - 0.6 - 2.3 + 0.9 - 0.1 - 0.4 - 1.3 + 0.6	65	4† 1† 5 5 4 1 5 16 1	14 17 17 17 20 15 11 22 14 13	13 13 13† 13† 13 13† 9 13† 13	36 31 36 26	5. 03 4. 16 1. 90 3. 25 4. 84 3. 29 3. 00 4. 46 2. 35	0.00 - 2.29 - 1.38 + 0.87	1. 56 0. 96 0. 60 1. 50 1. 15 0. 70 1. 34 0. 86 0. 54	T. T. 0 2.0 T. 5.0 0.2 7.0 4.0	6 11 11 8	10 11 18 18 18 17 12 11 17	4 2 0 0 0 4 3 2	17 18 13 13 13 14 15 17 12	n. n. n. se. n. s. n. s. n. s. n.	A. Thomas B. Etheridge, Miss Mary A. Smith. Miss Hattie N. Moses. James S. Ruffin. Miss Martha Sinclair. Shelby A. Robert. George S. Martin. U. S. Weather Bureau. Orlando F. Cantwell. F. L. Dennison.
Arkansas. Alicia	Lawrence	250	8 20	43.10	- 0.3	66 70	5 5	14 18	13 13	36#	1.12 1.73	- 2.14		4.2			10		sw.	McCullough & Guelck. J. W. Campbell.
Arkadelphia (near) Arkansas City Batesville Bee Branch Benton Bentonville Bergman Black Rock Brinkley Salice Rock Samden Lenterpoint Dardanelle Dodd City Dumas Dutton Eldorado England Eureka Springs Fayetteville	do. Desha. Independence. Van Buren. Saline. Benton Boone. Lawrence. Monroe Izard. Ouachita. Howard. Monroe Faulkner. Clay. Yell. Marion Desha. Madison.		5 29 7 20 5 7 15 8 26 8 27 12 8 29 20 26 31	41. 6 40. 8 38. 0 40. 0 42. 8 43. 9 44. 4 41. 0 40. 8 40. 8 ⁴ 39. 2 36. 9 43. 8 44. 3	- 1.7 + 0.5 + 3.3 - 1.5 - 1.9 - 0.9 - 1.4 + 3.0 - 0.3	70 70 64 70 67 72 71 70 70 74 71 65 71 76	15 5 5 5 17 5 4 5 6 5 17 19 5	12 17 14 13 14 19 21 18 11 17 12 8 25 16 16	13 25 13 9 9 13 13 13 24 13 9 9 24† 13 9	41 41 35 36 43 38 36 38 49 39 33 54	1. 80 3. 21 0. 29 0. 55 1. 04 2. 76 0. 60 4. 73 2. 55 3. 10 2. 30 1. 09 0. 68 0. 40 5. 27 1. 24 4. 84	+ 1.77 - 1.68 - 2.47 - 1.97 - 1.80 + 0.19 - 1.94 - 1.60 - 2.45 - 2.60	1. 70 0. 45 1. 00 1. 98 0. 26 0. 39 0. 31 1. 71 0. 30 1. 98 1. 45 1. 65 0. 45 0. 60 0. 40 2. 30 0. 57 1. 97 1. 98	T. 0 4.5 6.0 0 0.3 3.0 T. 4.0 T. T. T. 2.0 3.5 6.0 2.0 T. 4.0	7 4 4 2 2 7 6 3 13 3 10 6 7 3 1 10 4 11	11 16 12	10 9 4 11 11 11 11 11 11 11 11 11 11 11 11 1	6 10 15 16 11 7	ne. ne. e. s.	J. A. Ross. W. C. Blundell, Lelia I. Teter. J. E. Scanlan. P. B. Jackson. U. S. Weather Bureau. John T. Maxèy. S. J. Howe. H. L. D. Whitson. W. H. Stoner. R. K. Quarterman. J. M. Huddleston. Mrs. B. E. Bishop. G. H. Burr. Jacob Brobst. A. Bernard. Neal Dodd. Lawrence Waterman. J. M. Ricketts. Jeff J. Babb. J. C. Chenault. George W. Nichoalds.
ayetteville. ordyce. ort Smith raziers Turnpike. ulton. eorgetown lardy. lelena. tot Springs. luttig.	Sebastian Pulaski Hempstead White Sharp Phillips Garland	481	30	39.2 44.2 41.2	- 0.2 - 0.5 + 1.4 - 3.9 - 0.4	63 68 68 71 67 65	5 5	15 21 21 21 14 23 22 23	9	35 36 35	4. 09 3. 26 1. 04 3. 83 3. 76	- 2.39	2.00 0.32 1.82 2.00 2.15 0.48 1.11	2.0 T. 2.1 0 T. 3.0 0.2 0	8 4 3 6 7 6 9	10 13 6	10 6 10 9			University of Arkansas. J. B. Atkinson. U. S. Weather Bureau. R. E. Brown. B. C. Logan. Wm. N. Harris. C. A. Caywood. J. B. McLood. Army and Navy Gen. Hos. C. A. Berry.
onesboro 'unction .ake Farm .ewisville .cttle Rock .utherville dalvern dammoth Spring Marked Tree	Craighead Union Jefferson Lafayette Pulaski Johnson Hot Springs Fulton Poinsett	345 195 262 357 775 277 512 229	17 19 5 9 34 15 25 8	41. 4 44. 9 43. 4 44. 0 43. 3 40. 4 42. 8 38. 8	+ 0.4 - 0.7 - 0.2 - 0.5 - 1.3	65 68 68 72 68 70 70 69	5† 1 19 5 5 5 5 5	15 25 18 21 23 18 20 11	13 28 13 13† 9 9† 13 24	35 31 37 42 31 36 38 40	1. 07 2. 94 4. 51 4. 82 2. 22 1. 44 3. 69 0. 78 1. 93	- 3.49 - 1.09 - 2.02 - 2.24 - 0.23	0. 45 0. 76 2. 31 1. 50 1. 56 1. 03 1. 20 0. 45 1. 12	4.5 0 T. 0 T. 4.0 0.5 0.9 0.8	4 6 8 10 9 3 10 7 5	10 12 14 12 17 16	5 4 6 8	9 14 13 13 6 5	e. ne. sw. w.	Benedictine Sisters. J. A. Lowderback. G. L. Spellman. F. W. Youmans. U. S. Weather Bureau. W. R. Hentschel. Miss L. C. Smith. F. Wallick. Chapman & Dewey Lum. C.
dena. Vewport Vine Bluff Vecahontas Vond Vortland Veseott Rogers Veringbank	Ashley	1, 100 231 215 1, 250 122 327 1, 385 182	26 28 24 20 15 3 24 21 5	41. 4 39. 8 37. 1 44. 3 42. 0	+ 1.5 - 0.4 - 1.6 + 1.0	68 67 66 66 64 72 68 65	5 4† 1† 5 5 16 1 5	22 15 18 11 10 25 17	9 24 13† 24 9 25† 13 9	39 38		- 2.22 - 1.58 - 0.76 - 2.60 - 1.85 + 1.24 - 2.07	1. 28 0. 97 2. 05 0. 62 0. 21 1. 30 2. 12 0. 03 2. 07	1.5 2.5 1.0 0 T. 0.5	8 14 3 2 11 10 2	16 23 12 13	5 0 9	10 8 10	sw.	R. R. St. John. Chas. Sprigg. J. H. Hudson. Benedictine Sisters. A. F. Stevens. T. A. Corson. A. M. Ellsworth. Carl A. Starck. G. Field
pringuals ubiaco. wain exarkana. Varren. Vhitecliffs	Arkansas Logan Newton	182 495 1,050 2,300 332 304 206	25 15 1 28 17 8 19	42.7 41.6 37.7 43.0 42.9	- 1.5 + 0.1 - 4.3 - 1.8	67 71 63 73 73	5 5 5 5 5	15 19 12 21 20	13 10† 9 13 13	35 32 31 ¹ 40 38	3.37 0.26	- 1.19 - 3.14 + 1.70 + 0.18	1. 94 0. 12 0. 53 2. 18 2. 20 2. 00	0.3 0.9 4.7 0 0 0.1	8 3 4 8 11 9	15 19		10 9	n. sw. s.	H. A. Buerkle. New Subiaco Abbey. George Paxton. D. E. Moore. W. J. Savage. F. B. Lane. S. D. Jester.
Vynne	Cross	250	4	41.4	- 0.3		5	15	13	31	2.52	- 0.31	0.90	T	8				******	John Seals.
Mississippi.	Charles	100		40 4		20	04	07	104	20	0.00		1.40	0	15	0		10		F W Cook
nguilla	Sharkey Tunica Panola	107 200 230	16 25	46. 4	- 1.2 - 1.4	68 71 70	2† 5 5	27 21 21	19† 19 13	30 36 33	9.95	- 1.78 + 2.44	1. 48 2. 05 2. 18	0 0	15 6 10	14 13	5 1	18 12 17	n. s. nw.	E. W. Cook. H. J. Irvine. J. M. Cox.

TABLE 1.—Climatological data for December, 1912. District No. 7—Continued.

Mississippi—Contd. Big Creek. Canton. Charleston. Corinth. Crenshaw. Corinth. Crenshaw.	Calhoun Madison Tallahatchie. Coahoma Bolivar Yalobusha Alcorn Panola Montgomery Hinds Jefferson Washington Leflore Grenada De Soto. Benton Marshall Attala Marshall Quitman Adams Union Pontotoe. Clalborne	228 228 177 160 241 187 222 270 126 140 124 439 1435 600 430	1 22 2 5 3 24 3 13 25 11 25 2 2 3 2 4 3 2 5 2 2 2 2 2 5 3 2 4 3 3 2 5 2 2 2 2 2 3 2 4 3 3 2 5 2 2 2 2 2 3 2 4 3 3 2 5 2 2 2 2 2 3 3 2 4 3 3 2 5 2 2 2 2 3 3 2 4 3 3 2 5 2 2 2 2 3 3 2 4 3 3 2 5 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3	42.5 41.0 44.4 49.1 49.5 44.5 44.4		66 72 75 70 66 69 72 72 71	5 Date.	Towest:	13† 28 19	Greatest dally range.	7. 15 9. 44 7. 14	Departure from the normal.	Greatest in 24	Total snowfa	Number of rainy 0.01 inch or mc	Number of clear days.	Number of pe ly cloudy day	cloudy days.	e : Prevailing wind tion.	Observers. J. P. Havens.
Big Creek. Canton. Charlestom. Charlestom. Clarksdale. Cleveland. Coffeeville. Corinth. Crenshaw. Duck Hill. Edwards. Fayette. Greenwood. Grenada. Hernando. Hernando. Herkory Flat. Holly Springs. Kosciusko. Malone. Marks. Natchez. Port Gibson. Coscidale.	Madison Tallahatchie. Coahoma. Bolivar. Yalobusha Alcorn Panola. Montgomery Hinds Jefferson Washington Leflore. Grenada De Soto. Benton Marshall Attala Marshall Quitman Adams Union Pontotoe Claiborne	177 160 241 470 187 222 270 126 140 124 391 435 600 430	22 2 5 3 24 3 13 25 11 25 12 3 24 3 25 15 25 11 25 12 3 24 3 25 15 16 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17	48. 2 48. 3 42. 5 41. 0 44. 4 49. 1 49. 5 44. 5 44. 4 42. 4	- 1.7	72 75 70 66	3 6 5	20	28 19	32 45	9.44 7.14	+ 4.57		0	17	10	6	15		J. P. Havens.
anton harlestom larksdale leveland orfleeville orinth renshaw Duck Hill Edwards Fayette Freenwood Grenada Herkando Herkory Flat Holly Springs Kosciusko Malone Marks Natchez Ort Gibson Coseddale	Madison Tallahatchie. Coahoma. Bolivar. Yalobusha Alcorn Panola. Montgomery Hinds Jefferson Washington Leflore. Grenada De Soto. Benton Marshall Attala Marshall Quitman Adams Union Pontotoe Claiborne	177 160 241 470 187 222 270 126 140 124 391 435 600 430	22 2 5 3 24 3 13 25 11 25 12 3 24 3 25 15 25 11 25 12 3 24 3 25 15 16 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17	48. 2 48. 3 42. 5 41. 0 44. 4 49. 1 49. 5 44. 5 44. 4 42. 4	- 1.7	72 75 70 66	3 6 5	20	28 19	32 45	9.44 7.14	+ 4.57		0	17	10	6	15		J. P. Havens.
harleston Clarksdale Clarks	Tallahatchie. Coahoma. Bolivar. Yalobusha Alcorn Panola. Montgomery. Hinds. Jefferson. Washington. Leffore. Grenada. De Soto. Benton. Marshall Attala. Marshall Quitman. Adams. Union. Pontotoe. Claiborne.	177 160 241 470 187 222 270 126 140 124 391 435 600 430	2 5 3 24 3 13 25 11 25 12 3 24 3 25	48. 3 42. 5 41. 0 44. 4 49. 1 49. 5 44. 5 44. 4 42. 4	- 1.7	75 70 66	5	20			7.14								SC.	
larksdale leveland levela	Coahoms Bolivar Yalobusha Alcorn Panola Montgomery Hinds Jefferson Washington Leftore Grenada De Soto Benton Marshall Attala Adams Union Pontotec Claiborne	160 241 470 187 222 270 126 140 124 391 435 600 430	3 24 3 13 25 11 25 12 3 24 3 25	42.5 41.0 44.4 49.1 49.5 44.5 44.4	- 1.7	66	5						1.95	0	4.5					Dr. G. W. Smith-Vaniz. W. B. Burke.
leveland. oorfieeville oorinth renshaw Duck Hill dwards ayette reenville reenwood renada lernando. lernando. lernando farks Sosciusko falone farks Satchez Gew Albany oontotoe oor Gibson	Bolivar Yalobusha Alcorn Panola Montgomery Hinds Jefferson Washington Leflore Grenada De Soto Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	160 241 470 187 222 270 126 140 124 391 435 600 430	3 24 3 13 25 11 25 12 3 24 3 25	44. 4 49. 1 49. 5 44. 5 44. 4	- 1.7 - 1.0	60	5†				6.25		1.54	T.	11	7	7	17	n.	A. C. Tuttle. W. W. Boone.
orinth renshaw Duck Hill dwards ayette reenville reenwood renada ternando leckory Flat olly Springs osciusko lalone tarks atchez ew Albany omtotoe ort Gibson	Alcorn Panola Montgomery Hinds Jefferson Washington Leflore Grenada De Soto Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	470 187 222 270 126 140 124 391 435 600 430	24 3 13 25 11 25 12 3 24 3 25	44. 4 49. 1 49. 5 44. 5 44. 4	- 10	60	5†				7.72		1.83	T.	12	13	0	18		. W. W. Boone.
renshaw buck Hill dwards ayette reenville reenwood renada leernando leekory Flat lolly Springs cosciusko lalone larks atchez ew Albany ontotoe ort Gibson seedale	Panola Montgomery Hinds Jefferson Washington Leflore Grenada De Soto Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	222 270 126 140 124 391 435 600 430	3 13 25 11 25 12 3 24 3 25	44. 4 49. 1 49. 5 44. 5 44. 4	- 10	60	91	10	19	37	9.50	+ 4.02	1.74	T.	11	17 11	6 2	8 18	8.	C. K. Bailey. M. A. Candler.
uck Hill dwards. ayette. reenville. reenwood renads. ernando. eckory Flat. olly Springs. osciusko. alone. arks. atchez. ew Albany ontotoe. ort Gibson	Montgomery Hinds Jefferson Washington Leffore Grenada De Soto Benton Marshall Attala Quitman Adams Union Pontotoe Claiborne	222 270 126 140 124 391 435 600 430	13 25 11 25 12 3 24 3 25	49. 1 49. 5 44. 5 44. 4	- 1.0 - 0.4 - 0.7 - 2.2 - 0.8	69 72		18	13	01	4.51		1.90	0	6	11	10	10	n.	Rodgers Woollard.
dwards ayette reenville reenwood renada. ernando. ernando. ernando. sociusko. alone arks atchez ev untotoe ort Gibson osedale.	Jefferson Washington Leftore Grenada De Soto Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	270 126 140 124 391 435 600 430	25 12 3 24 3 25	42.4	- 0.4 - 0.7 - 2.2 - 0.8	72	17	24	20†		10.04	+ 5.64	2.24	0	11	7	9	15	S.	W. H. Eskr dge.
reen ville reen wood renada . ernando . eeckory Flat	Washington Leftore Grenada De Soto. Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	126 140 124 391 435 600 430	25 12 3 24 3 25	42.4	- 2.2 - 0.8		17	26 24	28 25		11.80 12.82	+ 5.64 + 6.82 + 7.85 + 3.02	1.90 2.39	0	16 13	10 8	10 8	11 15	n. nw.	E. F. Farr. T. L. Darden.
reenwood renada. ernando. eckory Flat olly Springs. osciusko alone. arks. atchez. ew Albany. ontotoe. ort Gibson. osedale.	Leftore Grenada De Soto Benton Marshall Attala Marshall Quitman Adams Union Pontotec Claiborne	140 124 391 435 600 430	12 3 24 3 25	42.4	- 0.8	71	17 5	26	28	34	7.55	+ 3.02	1.74	0	13	12	3	16	S.	M. G. Harbison.
renada ernando. eckory Flat. olly Springs. osciusko. alone. arks. atchez. ew Albany. ontotoe. ort Gibson. osedale.	Grenada De Soto. Benton. Marshall Attala. Marshall Quitman. Adams. Union. Pontotoc. Claiborne.	391 435 600 430	24 3 25	42.4		68	5†	26		34	8.61	+ 2.82	1.67	0	14	9	8	14	90.	J. H. Stephen.
eckory Flat olly Springs. osciusko alone arks atchez ew Albany ontotoe ort Gibson osedale.	Benton Marshall Attala Marshall Quitman Adams Union Pontotoe Claiborne	435 600 430	3 25		0.7				10	20	4 40		1 00		11	13	5	13		W. F. Wood.
olly Springs. osciusko alone arks arks achez ew Albany mototoe ort Gibson	Marshall Attala Marshall Quitman Adams Union Pontotoe Claiborne	600 430	25		- 0.5	71	5	19	13	33	4. 46 6. 15		1.88 2.10	0	10	5	20	6	s. n.	H. Powell.
osciusko. alone arks. atchez. ew Albany. ontotoe. ort Gibson.	Quitman	163	99	40.4	- 3.2 - 2.0	66	5	20		30	6.49	+ 1.36	1.73	T.	11	11	6	14	se.	L. B. Mosby.
arks	Quitman					70	3	24	25†	37	9.49	+ 5.17	1.75	0	15	13	10	8	S.	E. L. Lucas. M. J. Wilkins.
atchezew Albanyontotoeort Gibsonosedale	Adams		3								7.50									T. P. Banister.
ew Albanyontotoeort Gibsonosedale	Union Pontotoc Claiborne		24	46.1	- 4.5	73	2	26	30	25	15.34	+ 9.93	3.40	0	14	13	2	16	ne.	F. L. Garrity.
ort Gibsonosedale	Claiborne	398	3												10					H. Marshall.
osedale	Polive-	475 116	23 24	43.6 46.4	-1.7 -2.4	66 70	5 1†	23 24		28 38	7.68 13.21	+ 3.07 + 8.14	1.35 2.20	0	10	5 7 7	18	8 20	8e. e.	Dr. C. W. Bolton. H. H. Crisler.
	Bolivar	143	4	42.2	- 2.4	68	17	20	13	42	5.80	+ 0, 19	1.80	T.	12	7	1	23	nw.	T. J. Murray.
	Tate	284	3														3			. C. Brickell.
1000000	Madison		9	48.1		71	3	27		31	9. 41	+ 5.01	2.70 2.05	0	13	11	3	17	se. nw.	J. C. Pitchford. Prof. G. H. Kent.
ıffolkwan Lake	Franklin	148	11 7	50. 6	+ 1.1	73	3†	26	28	30	7.56	+ 6.70	1.70	T.	10	7 14	8 5	12	se.	Dr. S. D. Robinson.
chula	Holmes	130	7	46.8		70	5t	26	25	30	11.04	*******	1.80	0	15	3	13	15	n.	Dr. M. P. Winkler.
niversity	Lafayette	502	19	44.01	- 0.9	65	5	19	13	25 i	7.74	+ 2.62	2.47	0	10					. Prof. J. H. Dorroh.
dica	Hinds	287 247	8	49.0 49.0		73 70	5 3 17	19 25 33 21			11.36	+ 5.92	2.40 2.38	T.	16 16	8		20 21	ne. se.	Dr. J. B. Dudley. U. S. Weather Bureau.
cksburgater Valley	Yalobusha	300	23	44.2	- 1.7	66	51	21	13	32	9.03	+ 4.17	2.20	T	10	14	3	14	nw.	Miss Loula Erikson.
oodville	Wilkinson	560	19	51.1	+ 0.2	74 74	5† 1†	31 26	19+	29	17,40	+11.93	4.91	0	19	12		13	n.	James E. Lee.
azoo City	Yazoo	116	18	46.2	- 1.1	74	3	26	28	32	11.09	+ 6.63	1.73	0	14	13	1	17	nw.	W. H. Courts.
Louisiana.																				
bbeville	Vermilion	18	24	53.9	0.0	78	17	32 28	28 25	27	13.86	+ 9.33 + 7.57	2.50 2.30	0	14 13	8	8	15 22	n. n.	C. J. Edwards. Nellie Graham.
exandria mite	Rapides Tangipahoa	77 130	24 24	48.6	-1.3 + 1.4	70 73	1†	28	19	36	15, 44	+10.56	3.50	0	11	9	20	2		Lulu M. Wentz.
ntioch	Claiborne			45.5		77	5†	23	25	37Ь	6.31		1.50	0	14	12	0	19	S.	W. L. Anglin.
voca Island	St. Mary	9	1								11.21		1.50	0	14	10	3	18		J. N. Phar: & Sons (Ltd.
aton Rouge	East Baton Rouge.	60 20	24 12	53.5	+ 1.0 + 1.4	77 75	3 3†	32 32	28	30	17.59	+12.35 $+9.19$	2. 15 3. 25	0	16 15	10	2	19	e. e.	Elmo M. Bott. C. S. McFarland.
ırnside	Ascension Plaquemines	1	24	59.8	+ 1.3	82	4	45	201	24	8, 83	+ 3.92	2.22	0	11	9	8	14	ne.	Graham Myers.
des	St. Martin		2	54.2		80	1	30	19†	31e	15.68		3. 10	0	15	9	11	11	n.	C. E. Smedes.
lhoun	Ouachita	180	24	46.8	- 0.5 - 4.2	77	1 4†	22 28	26	39	7.81	+3.13 + 11.59	1.34 2.34	0	12 16	7 8	13	11	ne. se.	North Louisiana Expt. S Adolph Bruckert.
meron	Orleans	6 7	19	50.6 54.8	- 4.2	73 78	4	32	201	34	11.88	+11.09	2.72	0	17	12	0	19		Lovola College
eneyville	Rapides	67	24	52.4	+ 2.2	76	5	30	19†	38	15. 10	+10.02	2.55	0	11	7 9	1	23	n.	Walter I. Tanner. Cinclare Central Factory. John A. White. John B. Reily.
nclare	W. Baton Rouge	119	2	52. 2 52. 0	1.00	81 76	4	30 28			20.05 13.00	+ 8.04	3.90 3.25	0	15	7	3 9	19 15	e. n.	John A White.
inton		113 65	24 11		+0.6 + 0.8	82	2	23				+ 2.06	1.38	0	12	6		17	3.	John B. Reily.
dumbia	Caldwell																			H. W. Blanks.
vington	St. Tammany	39	20	52.4	+ 1.1	74	4	29	28†	35	11.85	+ 7.22	1.60	0	12	3 7	1 6	27 18	n. n.	Cecille P. Champagne. J. P. Lucas.
odsononaldson ville.	Winn	33	3 24	55. 2	+ 0.8	71 78	17	26 35			9.86 28.03	+23.12	5.50	0	14	8		22	n.	John F. Park.
itchtown	do		1								14.95		3.00	0	13	2	12	17		. Picard & Geismar (Ltd.)
rmerville	Union	177	24		- 4.7	70	6	24	19†	47	7.30	+ 2.40	1.80	0	10	3	5	23	n.	W. P. Chandler. C. L. Achor.
anklin	Concordia	10	20	54.8	+ 1.3	82	1	32	14†	37	15. 18	+10.52	3, 18	0	18	6	8	17	ne.	J. M. Bonney.
anklinton	Washington		2	52.7	- 8.9	75	4	32					3.90	0	14	0	16	15		J. M. Bonney. Herbert R. Babington.
and Cane	De Soto	302	18	39.2	- 8.9	66	17	16	28	37	6, 41	+ 1.90	1.31	0	11	6	3	22	n.	G. Foster Provost. St. Charles College.
and Coteau	St. Landry Vermilion	93 41	24 20	54.8m	+ 1.0	79 76	1 1 1	31 34	28 12			+ 7.97	3. 25	0	13	6	13	12	n.	White Lake Land Co.
ammond	Tangipahoa	44	20	54.0	+ 2.0	74	4	29	28 27	35	14.05	+ 9.90	2.40	0	12	13	4	14	30.	C. C. Carr.
ouma	Terrebonne		24	54.0	- 0.5	80	4	30	27	35	10.05	+ 5.74	2.40	0	12	12	0	19	n.	J. M. Foote.
na	La Salle	30	1	49.2	+ 0.5	74	17	26 33		37	11. 21 17. 10	+12.04	4.75	0	12	9	9	13 15	n. se.	C. E. Wilbanks. J. F. Buch.
anings	Calcasieu Morehouse		15		+ 0.5	78 60	1†	19			5.70	T 12.01	1. 10	0	9	11		20		. P. M. Dowley.
fayette	Lafayette	36	24	53.8	+ 0.7	82	1	30	28	38	15.74	+11.34	3.90	0	18	4		21	n.	J. J. Davidson.
ke Charles	Calcasieu	22	24	56.2	+ 3.3	89 75	3	26 35	22† 13†	52 25	7.88 15.66	$+4.05 \\ +11.22$	2. 10 2. 67	0	6 13	8 9		21 21	e. ne.	George Boudreaux. L. J. Nunemacher.
Rose (near)	Cameron	9	1		- 1.3	84	1 4	31	28	32	8.89	+11.44	2.00	0	15	7		16	6.	Louisiana Delta Farms C
wrence	Plaquemines	6	21		+ 1.4	79	41	33		40	9.18	+ 5.14	3.30	0	15	11		19	0.	H. C. Warmoth. C. M. McFarland.
esville	Vernon		5															10		. C. M. McFarland.
perty Hill	Bienville	100	24	50.2	+ 0.7	73	17	25	28	35	7.26 4.59	+ 2.17	1. 15 1. 53	0	12	10	2 4	19 21	n. n.	E. A. Crawford. Bettie M. Dennis.
gansport	De Soto	192 45	8 24	52.3	+ 0.4	80	4	25	19	39	17.30	+12.59	4. 20	0	13	9	3	19	80.	Charles B. McNeil.
erryville	Calcasieu																			Harry J. Chatterton. Ethel Fort.
inden	Webster	194	24	44.3	- 3.6	75	5	23	25	39	6.49	+ 1.41	1.50	0	13	6	7	18 24	e. ne.	Ethel Fort.
onroe	Ouachita	82 14	24	47.2	- 2.3	72	17	26	-	35	8.76 9.04	+ 4.09	1. 45 1. 83	0	15 11	7 5		23	ne.	Kathryn Key. Virgil E. Kinsey.
organ City	St. Mary Assumption		4	55.0		78	1	33			14. 15		2.80	0	11					Leon Godchaux Co.
wellton	Tensas		5	49.3		71	17	28 34	25†	39	10.17		2.27	0	10			20		. John D. Fultz. Mrs. John A. Gebert.
w Iberia	Iberia	15 51	24 41	55.2	+ 0.5	78 77	1†	34	13†	25 26	16.78 11.21	+12.32	2.70 3.15	0	18 19	6	5	20	e. ne.	U. S. Weather Bureau.
w Orleans (1)	Orleansdo	18	24	55.8	+ 1.0 + 1.3	79	4	31	28	35	10.72	+ 6.75 + 5.89	3.38	0	13	4	3	24 25	n.	Sugar Experiment Static
pelousas	St. Landry	18 83	20	48.4	- 2.8	73	4	29		32	19.01	+14.04	6. 10	0	15	4	2	25	n.	Andrew Moresi.
radis	St. Charles	29	1		******				1000		10.08 10.64		2.25 1.82	0	15 13	8	0	23 19	6.	R. E. Boyce. George F. Bancks.
arl River	St. Tammany Bossier	29 268	6 20	44 0	- 2.6 + 1.4	71	10	21	13 28				1 200					400	(Ue	

TABLE 1.—Climatological data for December, 1912. District No. 7—Continued.

			rears.	Temp	perature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		dfree-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy da 0.01 inch or more	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind cition.	Observers.
Louisiana—Continued. Reserve. Richland Plantation. Robeline. Ruston St. Francisville Schriever. Schriever. Schriever. Simmesport. South University Farm. Sugartown Tallulah. Walker. Winnsboro.	St. John Baptist Rapides Natchitoches Lincoln West Feliciana Terrebonne Caddo A voyelles Jefferson Calcasieu Madison Livingston Franklin	147 312 115 17 249 42	11 16 17 9 20 41 6 15	50.0 47.2 46.4 50.6 54.6 46.6	+ 1.5 + 0.6 - 1.6 + 0.3 - 2.3 + 0.2	90 72 75 72 75 82 71 71 72 82	16 18 1 17 2 1 17 17 	29 31 24 28 29 32 30 	20 19 28 8† 28 19† 27 12 25 18†	27 38 36 27 37 27	10. 71 11. 14 9. 45 6. 58 16. 97 10. 35 4. 77 14. 21 10. 62 11. 56 10. 46 16. 00	+ 5.58 + 1.94 + 5.94 + 0.40 + 4.71 + 7.17	2. 10 2. 57 1. 40 1. 30 4. 12 2. 90 1. 50 2. 70 2. 70 2. 64 2. 10 2. 30	0 0 0 0 0 0 0 0 0	9 16 11 13 15 15 15	15 12 11 17 4 8 8 2 9	5 1 0 9 2 7 0 5 12	11 14 19 14 18 21 16 29 11 18	nw. n. s. se. n. se. ne. se.	Leon Godchaux Co. (Ltd.) A. B. Pendleton. Ruby McCook. Andor M. Larson. G. W. Newman. William H. Gautreaux. U. S. Weather Bureau. C. T. Leigh. F. L. St. Martin. G. W. Richardson. Neal T. Halt. H. C. Fondren. J. C. Cartton.

a, b, c, etc., indicates respectively 1, 2, 3, etc., days missing from the record.
**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 7, Lower Mississippi Valley.

Stations	Watershed.														D	., U	f moi		- 1		-		1	1	1							
Stations.	watersned.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Colorado.																																
ena Vista	Arkansas				T.	. 20																				70					***	. 07
han	Big Sandy	T.			. 10			. 05																		Т.	.01					
non City	Arkansas				05	T.	T.	****		****	T	.01		****												T.					T.	
lorado Springs ipple Creek	Fountain Oil Creek	T.		T.	. 18				. 08	T.	02															T.						****
chara Camps	Cucharas							. 08				m												****	****	****						
ds	Big Sandy					.84	08					1.														. 28						
irview emont Experi-	St. Charles							. 02			. 05														:	. 07						T.
nent Station.						0.00			/ID		T.						12	. 15		T.	T.		T.			T.	. 21				. 09	. 06
rfield	Little Ar- kansas.	. 18			. 05	. 37			T.		1.																					
mps	Big Sandy	T.				. 05						. 02						10								T.						
rmit Lake	Grape Creek.	. 11																								.00	.10					
ehne (near)	Purgatoire					. 23						. 03																				
ke Moraine	Fountain		1		. 13	. 12		. 02	. 07		. 02	. 02						T.								T.						
mar	Arkansas																		• • • • •													
Note Pees	Cucharas					.82													T.								. 29				1.4	
Veta Pass	Arkansas	. 04	T.	T.	T.	T.		T.			T.	T.					. 12	. 28	. 02	.08											. 14	. 11
non (near)	Big Sandy					. 20																. 03										
drid	Purgatoire							1	.11			1	1	1		. 21	. 21					. 20										. 28
rshall Pass	do					10		1	1		1										***	****			****	. 50						
nument	Fountain				. 90		06	1									0000									. 30	. 05					
rth Lake	Purgatoire					. 12																				T.						
eblo ocky Ford	Arkansas							1			1			-																		.03
Elmo	Chalk Creek.	. 20)		. 08	91		1		1		1					. 03	. 17					T.		1							T.
lida	Arkansas					. 25			03				1				0000						. 07				. 10					
nta Claraeridan Lake	Huerfano Arkansas												1	1	1												T					
onewall	Purgatoire				T.	T.																	T.	****		490						
inidad	do					. 43			T.																							
vo Buttes Reser-	Arkansas					.06																										
voir.					-						-							ne								06					T.	
ctor	Oil Creek	T.			Т.						Т.							.00														
las	Cimmaron Arkansas								1		099																					
ayneestcliffe	Grape Creek,	T.																									. 08				. 04	.02
infield	Clear Creek	. 20	T.		. 03	. 05				T.	T.						.01	.04	.01												T.	
oodman Sanato-	Fountain				Т.	. 53							1		1						-	-				10	m	700	m	T.	. 20	.10
rium. ortman	Arkansas	T.		T.	. 10				T				T.	T.	. 10	. 20	T.	. 10	. 10	.15	Т.	T.	T.		. 10	. 10	I.	T.	T.	I.	. 20	1.20
								1			1	1																				
New Mexico.																																
bbott	Canadian						. 14														T.	T.						****				
bert	do										1	1						. 04			1.		. 24									
iroraell Ranch	do					. 08						1																				
ack Lake	do		1																								• • • •					
heza	do						. 05																T.									
mpana	do					. 10	. 20				1												.24				. 15					
marron (near)	do	1	1			1	. 02																. 09									
ovis	Red						. 01																. 05		1							
iervo	Canadian						. 20																. 10		1							
awsonizabethtown	do			1000		T.																. 02					T.					
olsom						. 09			ì														. 03				1.					
ort Union	Canadian						. 16																. 03									
aydenoosier Ranch	do																						T.		1	T.						
hnson Park	do																					T.				A .						
hnsons Ranch	do						. 20	150																								
appusake Alice	do				. 04																						. UE					
ogan	do							7															. 08									
ykins (near)	Red					-			5														. 13									
axwell (near)	Red					*												1														
elroseiami Ranch	Canadian					. 12																	T. 11					1				
ills (near)	do							0															1									
ontova	do																1															
ount Dora (near). ara Visa	do																															
alo Verde	do							2																								
samonte	do					1			. 10								. 02															
easant View	Red						1																									
aton	Canadian					T.																	20					7				
ociada	do					. 04	1 .2	4																								
osebud	do					1	2	3															T.									
oy	do						. 1	5													1	T.							7			
t. Vrain (near)	. Red						. 2	3										3					. 40)								
an Jon	Canadian						0.0	0															. 10) .								
olano pringer	do						. 0	6													T.	. 13	2									
avlor	do						. 1	4															1	5								
exico (near)	do					2																	2									
rementing	do							1											1	1			. 02	2								
ucumcari	Dry Cima'n																															
alley ance (near)	. Canadian						0	4																1								
	do																				1			-			090	1	-	1		

Table 2 .- Daily precipitation for December, 1912. District No. 7-Continued.

Stations.	Watershed.		_				1										of mo			1	-	-	1	-	-		1 1				1	-
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Tezas.																																
marillo	Canadian	.04					. 44																. 55	. 15								
rcher City	Red	.10	****	. 13												T.								. 51		- 0 0 0						
rthur City	do	17	08		06	T.		****	40	****	****	****		****	****	****	****		****		****			1.07								****
onham	Canadian					1.	. 40	****	. 40		****		****		****		****	****		****	****		****	1.01			****	****	****		****	****
nildress	Red																						.10									
hillicothe	do	. 24	****	. 10																												
larendon [[do	. 13		27	15	****		.06	95	****	****	****		****								59	1 59	. 32								
arksville	do						.05	****	. 00	****	****	****				****	****		****		****	. 02									****	****
alhart II	Canadian						.03																									
enison []	Red				. 30			. 15																	. 35							
inley	do		. 40	****	. 80																	. 35									T.	****
enrietta	do		. 30	****	. 19																		20	. 10								
emphisiami	Canadian	.08					. 25																			****	****			****	****	****
chiltree	do																															
anhandle	do		****		. 60																											
aris	Red																					. 28										
lemons	Canadian							10	****	****	****						****			****		****	T.	15	****		****					****
uanah ingo Crossing	do																				0000	. 40		1.40								
omero	Canadian			****	***		. 50																									
nerman	Red		T.	T.	T.				T.	. 29							T.							. 45								
ratford	Canadian																										10000					
exline	Red																				T	.50					10000					
ulia ellington	do	18	.10	****	****	****	. 20	****	****	****			****	****			****	****	****				T.						****	****		
ichita Falls	do																															
infield	do				T.	T.			. 27			T.				T.	T.						T.							. 17		
Kansas.																																
den	Arkansas	. 22				T.											T												1			
nthony	Arkansas			. 18		A.					****		****	****	****		1.	****			****					****					****	
shland	Cimarron	. 03																														
urlington	Neosho	.35		. 20																												
nanute	do																															
marron	Cimarron																											****			****	****
ffeyville	Verdigris		.01			T.																						****				
lumbus	Neosho	.32		.05		T.	. 03												T.									****			****	
elidge	Arkansas																															
ttonwood Falls	Neosho																															
uncil Grove	do																															
nningham odge City	Arkansas										T.						T. T.															
Dorado	do	. 57		.24													1.				1	2			****	144			1		1	
llinwood	do	. 10	T.			T.					1						T.				1	1	3000			1	10000					
mporia	Neosho	. 25		. 27													. 01															
ureka	Verdigris	. 80															T.															
all River	Cimarron				I.		T.				1	1															10000					
redonia	Verdigris				. 01		T.										. 01															
arden City	Arkansas	T.																														
reat Bend	do	. 06				T.												T.														
reensburg		. 08		T.	T.		PFS.				1.000																					
ess	Verdigris	. 50		. 27	1.		T.																									
oward	Verdigris						T.				10000							T.													****	
utchinson	Arkansas	. 36									10000																	T.				
dependence	Verdigris	. 76		. 13			. 02																									
la	Neosho										1																					
enetmore	Arkansas	T.										. 02																****			T.	
ingman	do																					****	0000		2000	10000						
a Crosse						T.																							1		1	
akin	do										T.																					
arned	Neogho	T.			· · · · ·	T.									FIFT																	
BRov	Neoshodo		.24		.20										T.																	
iberal	Cimarron	T.			. 20	T.				****		****																				
acksville	Arkansas	. 03																												1	1	
cPherson	do	. 43																							A							
adison	Verdigris	. 45			. 20				70															****	***							
arion edicine Lodge	Neosho Arkansas	34		.03	.02	T.									T.																	****
inneola	Cimarron			.01						****		T																				
ount Hope	Arkansas	. 58		.02																												
eosho Rapids	Neosho		.64	. 22	.08																											
ess City	Arkansas			****																												
ewtonorwich	do	75		.03																										1000		
swego	Neosho	.37		. 10		****	T.																							1200		1
lains	Cimarron																															
att	Arkansas	. 18						1																								
ichfield	Cimarron					T.						T.																		1000		
omedan	Arkansas	. 64		04																												
oronto		32		. 24	****																										****	****
lysses		. 00		****	****	T.						1 1973																			****	****
alnut	Neosho			. 17	. 56		T.					1.																	1000			****
Vellington	Arkansas	.72		. 15	. 02										T.																	
ichita	do	.77		. 08																									1000			
infield		. 47		. 20	T.		T.	1																								
ates Center	Verdigris	. 20		.06	T.																							***			****	
Oklahoma.											1				1			1				1										
la	Canadian	.38	3	.39	T.		.07														1		T.	.49				1	1			
va	Arkansas	. 20)	. 15																							1	1				
ache				. 11		AT.																										

TABLE 2.—Daily precipitation for December, 1912. District No. 7—Continued.

Stations.	Watershed.									,	,		_	_		ay c	f mo	Hell.										1				,	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
klahoma-Contd.																																	
rdmore	Red	. 07	. 38		. 14			. 05																. 75									
artlesville	Arkansas Canadian	.57		.07																													
eaverlackburn	Arkansas																																
ache	Red Canadian			. 10																													-
alvinhandler	do	. 40	.28		. 24	****										****																	
hattanooga	Red	.67		. 23			T.																	.30									-
hickashaloud Chief	Washita	. 49		. 10	T.		.05																	. 25	. 26								
rawford	Canadian																																.].
ldorado	Reddo		. 19		.11	T.	.05	T.	. 05	.08														.76									
lk City	do																																
l Reno	Canadian Cimarron	.65		. 25	.07																												1
rick	Red	. 10					.02																T.	. 28									
ufaula	Canadian Arkansas	.21	.07	.09 T.			T.	, 02								****	****	****	****	****	****	****	****	. 43	****		****		****	****	****		
ort Gibson	do	.06	.31		. 10			T.																	T.								-
rederick	Red Canadian	. 10		.17	.05		.05																T.	. 20									
oodwell	do						T.																										
uthrie	Cimarron Canadian	.50		.20			. 05	****								• • • •																	:
lartshorne	do	.36		.08																				. 20									
IealdtonIelena	Red Cimarron	.30		. 65			T.			T.					.01		T.						T.	. 20									
Iennessey	do	. 50		. 14			. 10																										
Iobart Ioldenville	Red Canadian	. 64		. 17			. 10								T.		T.							. 13									-
looker	do					T.		T.																									
Iurley	Cimarron																						T.										-
dabelefferson	Red Arkansas	.77		.14		••••										****								****				1	****		1	1	
Centon	Cimarron																						. 05										-1
ingfisherawton	Red	. 61		. 35			****				****										****			. 25							****		1
IcAlester	Canadian			. 09	. 02																			.90									-
fangum farlow	Red Washita	. 12		. 20 T.	30		T.	. 20																. 25				1					-
lay	Canadian		T.																														
feeker	Arkansas	. 10																						. 15									
fuskogeefutual	Canadian	. 25	1					1					1							1		1											
eola	Washita			.09			T.																	. 22									
ewkirk	Arkansas Canadian			T.			T.				1						1							.30		1		1			1	111	
orth Muskogee	Arkansas		. 34		. 11																			. 17									-
akwood	Canadian			.11			. 10								T.		T.						****										-
kemah	Canadian			. 40	1								1											. 35									-
klahoma	do	. 32		. 14			. 04																. 10	. 02									-
auls Valley	Washita	. 59		. 19			T.								T.									. 43									
erry	Arkansas	. 18					. 02										T.																
ankin	Red	. 10		. 20			T.										T.							. 07									
lavia	Washita	. 75		. 22			T.																T.	. 55							0 0 4		
ac and Fox Agency	Canadian	. 37	. 37	T.	. 17			T.								.01							1	. 25								1111	
nyder:	Red	. 11		. 23			T.																	. 10			1						-
tillwater []	Cimarron			. 10	T.		. 28	. 0				1					.04		****														-
inita	do		1																														
VagonerVaukomis	Cimarron	63		15			.05																	. 30							1		-
Vaurika	Red	. 44		. 29	T.		T.							1		T.								. 75									
Veatherford Vebbers Falls	Canadian		. 03				. 02	2													10000				30				-		1		
Vhiteagle	do	. 33	3	. 20			. 02																										
Woodward Wyandotte	Canadian Arkansas	.07	.30																														-
	Al Kanous								-	1		1	1		1	1			1	1		1			1	1	-	1	1		1	1	
Missouri.											1								1														-
Belle	Meramec	T.	T.			T.																								. T.			
Sirchtree	Black Mississippi	. 05				.02	.20)					1					T.							20	0				. 20	1 .8	0	
ardwell	do	T.	1.14		.06	.70									1000						5			. 38						2	3	2	13
aruthersville	do	. 13	. 13		T.	.84		T.			T.							5										3		2	0		
assville Dean	White Neosho	. 18		T.	.01								1		-																		
oniphan	Black	. 14	1 .0			. 13																		. 35	5				1999		2 .0	4	
oodland	Meramec Black	. 17	.34				1												T.		1												
Iollister	White		. 30)								1			1																		
ronton II	Mississippido	.20	. 60		T.	T.					T		-			1	. 00	.07	1	T.			1	15								2	
acksonoplin	Neosho	. 25	5	T.		. 10				1					10000		T.		T.		1												
oshkonong	Black	. 15	. 12	2							. T.							. 00	5				1								4		
amar []	Neosho Mississippi	T.	36	1	. 02			. 10	0										.00	2											0		
Iountaingrove	White	T.	. 52																											. T.			
fount Vernon	Neoshodo	. 28	7 .12	T	T.				-				-		-		T.														4		
vew Madrid [Mississippi		. 10)			.54		-						-									. 0	1 .6	2		2	2		6		0 =
Oakfield Olden	Meramec White	. 22	2		T.												. 21	1	T.					T.						T	2		
	Meramec	.00			.00		1000									1000	- 0000	1000	T.		-1000	1		4.	1000.	-1000							* 10

Table 2.—Daily precipitation for December, 1912. District No. 7—Continued.

	Watershed														D	ay o	f moa	nth.														_	-
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Kentucky.																																	
landville	Mississippi	. 05	. 22			. 55	T.			T.	T.							. 02	. 02					. 52			. 05			. 45	. 26		2
Tennessee.																																	
rlington	Mississippi														****										****								
olivar [] rownsville [] ovington [] yersburg [] sckson enton elemphis illan [] renton roico City	Mississippido		1.56		. 23	. 29	. 51					. 22				****	****	. 21	.10			****	T.	. 30	. 95		.14			Т.	. 66		5
rownsville []	do		.90	****	.01	. 35	. 10					. 10	.10											. 40	T.			. 60		. 10	. 15		3
yersburg	do		. 55			62	1.00							****			****	T.	.88	****	****	****	Т.	1.00	. 20					.90	1.00		4
enton	do	T.	1. 10	.62	. 15	. 61			.04									. 06	. 18						.70		. 15	.06		. 22	. 50		35
emphis	,do	. 32	. 04	T.	.02	. 51					.06	T	****				T.	. 08	.06			****	. 15	. 20	. 70		. 08	. 51		. 49	.61		3
ilan	do		. 54		.32	. 44	. 00											. 20	.15					. 18	T.					. 52			2
nion City	do		****																	****			****		****			****					
Arkansas.																																	
licia	White	. 50				. 10			****															.42					40	.10			1
mity	Ouachita			·				****	79					****	****	****		****		****	.47	. 05	1.20			****			. 40	.85			1
rkadelphia (near). rkansas City	Mississippi White	.03	1.00	1.	. 60	. 50				. 36		.30						. 36				. 16	. 30	1.30	. 40					.08	. 70		6
atesville []	White	10	. 12			.02	. 02				T.		****		****			. 02		****	****			. 60	. 05					1.00	. 06	****	1
e Branch	Arkansas	* 10	***	***		. 10		****	***	****														1 00		1	1000				. 47		3
enton ville	Ouachita Arkansas Whitedo	. 26	****	T.								****	****					****	****	****		****	.39	. 03	****	****							0
ergmanlack Rock []	White		. 09				. 20					.02						.02						1 00	. 28					. 12	.31		1
rinkley	do		. 30		****	.11	. 12	****			·		****					T.	****	****	****			1.33	. 38			****		.20	. 52	****	2
alico Rock	Ouachita	****	.85	****	.07	.07	.02	****		. 26	1.	.16										. 50	.08	1.84	.14			. 04		. 08	. 62		4
enterpoint	Ouachita Red White		T.	T.					. 35	780																		.03	3	.75 T	. 54	****	44.00
arendon	White	08	. 50			. 10	. 14			T.		. 02						.00	. 02					1.65	. 10					. 42			2
orning	WRTS. 24-	. 03	.06			. 13			****		. 04							T.						. 45		****	. 04						(
ardanelle	Arkansas White		. 04																									****					1
odd City	Arkansas	. 65		. 25		. 52			. 43		. 20							. 10				. 20	2.00	. 30						. 62			1
utton	White		. 17			10				39		20			****							. 49	. 19	1.97	. 10			****		. 15	. 45		1
dorado	Ouachita Arkansas		. 45		T.	an			5	9.5		775			1							. 120		L. OUR						A.			1 2
reka Springs	White	. 12	.11	****	. 12																												(
ayetteville	Ouachita	.75	.31		.08	. 20			. 45		.15											. 43	1.80	. 20						.70			4
ort Smith	Arkansas	. 13		. 04	T.		T.																.11	1.82				****		. 58			0
raziers Turnpike ulton	Red		. 26		.10				T.	. 43		T.										. 50		2.00						*	.80		4
eorgetown	White		. 57			.08	T.											. 04						1.60	. 55		T			. 02			1
ardy	Mississippi	. 20	.02	T.	T.	.01	.13	T.			T.	. 23						.03				. 02	T.	1.11	. 60						. 50		. 3
elena	Ouachita	. 03	. 64		.10	. 04			. 28							. 01						.11		2.20						. 50	.35		0 -0
						. 56	. 01		. 33		.80			****	****			. 19			****	. 42		. 45			. 20			.10	. 12		
nesboro	White Ouachita			.33		. 10			76			48										. 64					. 26			. 47			1
ake Farm	Arkansas Red	*				. 18	*		* 26		T	1.50	****			****				****	.05	. 20		2.31				***		.80			4
ewisvilleittle Rock	Arkansasdo	. 15		. 10	. 02	. 13	T.	. 01	T		T											T.	. 34	1.22			. 02			. 32			2
utherville	do	. 08		T.	T.	. 49				. 80		. 10					T	T				.05	T.	1.20	. 10		. 16			33			100
[alvern]] [ammoth Springs	Ouachita White	.14	. 04			O.F.		1	8		0.1	1			4	7				1				. 184	1	1	1			. 43			. (
farked Tree	St. Francis				.06																									.06			1
fenaewport	Ouachita White	. 03	.10	. 02	. 23	. 15	. 25		.02		****	****						.05							.70	. 27					. 45		. 1
ine Bluff	Arkansas		. 26		. 02	.08	. 15			.30		.08					. 03	. 03				. 35	. 03	1.75						. 12			1
ocahontas	White	.11	T	T	T.	00																		T.									. (
15 3 2 5							T.		. 25			. 55						. 34				. 05	. 60	1.30				. 1	5		.70		. (
rescott	do		. 24		. 04	. 25				. 00		. 14		0000								. 00			. 03								. (
ogerspringbank	Arkansas Red	. 02	. 57													T.	T.	. 02				. 65	.07	2.07	. 07			T.		. 22	. 41		. 4
tuttgart	Arkansas	T.	. 40	T.	.01													. 15		****		. 08		. 09						. 12			. 1
ubiaco	do White	. 40	. 13	T.	T.						T.						T.							. 53						. 09			11
exarkana	Ked		. 40															0.5				29		2. 18	30			.2	0			. 70) ;
Varren	Ouachita Red		99		1.10	. 28	T.			. 35		.04										. 52	. 04	2.00						. 25	. 38		. 3
7iggs	Ouachita St. Francis		OF																				. 02	2.02			.08			.34	.39		1
ynne []	St. Francis		. 30			.10	. 10					. 03												. 00	1	1	1	-		-	1		1
Mississippi.										1																							
nguilla	YazoododododoBig Black	. 50	. 55	.85	1.00	1.48			. 15	. 10	·	1.35						. 35						1.45			. 22			3/	. 27	****	1
ustinatesville	do	****	2. 18	. 73	.58	T.	. 64		. 07	.32	1.	.35						. 35				T.	. 04	1.21	. 78						1 . 68		. 1
ig Creek	do		*	*	2.00	2.75			. 50		. 02	. 10			****			. 20				. 25	.20	1.31	. 15				7	68			
anton	Big Black	.03	. 52	. 10	1.61	1.98		.0	.08	. 10	.01	.92										.11		1.95						3!	. 40		. 1
harlestonlarksdale	do	T.	1. 27		.61	. 66						.54						. 18				. 08	.06	1.54	. 66			1		74			1
leveland	do	1.14	. 60	1.59	.57	1.29			. 25	T.	T.	. 27						.71				. 43	1.74	.88						1. 18			. 1
offeevilleorinth	Mississippi	1.00	2.50	1.02	. 64	. 64	2.56	3		0.4	1	20	rps.	1		1	1	338					T.	. 68	1.12	2		. 13	2	T.	. 62		. 1
renshaw	Yazoo	1.90	9.04		1 01	1.10			20		1.15	97						43				T	. 28	1.65						60			1
Duck Hill	YazoodoBig BlackMississippiYazoo	T.	1.90	1.60	1.21	2.24	T.	. 10	0 .20	10	1.	.70	T.					.75				.75	.75	1.75	T.		. 20	.3	0	38	.70		. 1
ayette	Mississippi	. 51		T.	2.24	2.39	.85				T.	1.79	T.					.36						2, 17			. 20		5	T.	.53		1
reenville	Yazoo	***	1.74		1.55	1.00	T.			. 16)											.04		1.13				. 1	3				
reenwood Irenada			4.06		1.00	1.000	. 40			1 40			1			10000		100													41		
Jernando III	do		1.00		.02	.82	. 05					.05				****		.12						2 10	. 8)			5				. 1
lernando Lickory Flat Lolly Springs Losciusko																											31	31000					. 1

Table 2.—Daily precipitation for December, 1912. District No. 7—Continued.

Stations.	Watershed.														I	Day	of mo	nth.													4		- 3
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Mississippi—Contd.																																	
Malone	Yazoo																																7.8
Marks	do				0 00	2 40	70		·			70											1 05	1 00	1 00			10				***	
Natchez	Mississippi	1.	1.10	1.	2.00	3.40	. 10	. 30	1.	. 10		1.	.95	. 10		****	****	. 40	****				1.05	1.90	1.20	****		. 10	****	****	. 95	****	15.3
Pontotoc	Yazoodo Mississippi	. 75	1.00	1.00	1.35	1.25						T.						T.					.33	. 50			.40	.60		. 50			7.
Port Gibson	Mississippi Yazoo		1.80		2. 20	2.12	T.	1.00		. 13		. 15	.77		T.			. 47				.02	1. 17	1.38	. 54			. 55			.91		13.
Senatobia	do		.00		. 30	.00				. 30		. 30				****						. 20	. 10	1.00	. 40	****	****			.00	.00		0.0
Shoccoe	Big Black Mississippi	. 24		T.	2.70	1.50	T.	T.	T.	. 29	.02	. 83						.39				. 07	1.04	1.22					. 45	.05 .90	.61		9.
Suffolk	Mississippi Yazoo	.01	1 70	2.05	.03	1.97	. 96	.01	.04	95	T.	.79	.02				m	.37			m	.41	1,97	1.33	40	****	. 76			.90	79		11.
Pohulo	do	2.0	11 16	69	1 27	1 05			15	92	Th	1 90			1	1		40			1.		.70										11.
University. Utica Vicksburg Water Valley Woodville	do	.90	1.57		.70	. 97			. 27		.30							. 53			1	*	*	*	*	*	*	*	*	*	2.50		7.
Vickshurg	Mississippi	37	. 78	2 20	09	1.95	.04	. 99	16		.00	94	T					. 39				85	.67	1. 62		****	. 30			93	.45		10.
Water Valley	Yazoo	2.20)	1. 25		1. 15		. 23		T.	.60	T.						.50				. 15	. 10	2.10						.75			
Woodville	Mississippi	. 12	. 12	3.85	1.06	2.13	. 57	. 10		. 04		1.14	. 13	. 16				.37				1.55	. 58	3.40			. 82	. 26		.70	.30		17.
Yazoo City II	Yazoo		1.73	T.	1.70	1.25	. 10		****	. 20		. 08	.00					. 41				. 20	1.10	1.25	. 74			- 10		T.	.94		11.
Louisiana.																																	
Abbeville Alexandris Amite Antioch Avoca Island Baton Rouge Burnside Burnside Cades Calhoun Cameron Carrollton Cheneyville Cinclare Colliston Colliston Columbia	Coast	. 01	. 10	.85	1.80	.96	.85					. 95	. 40					. 33				.60	2.50	2.40			1.50			. 61			13.
A mite II	Coast		1.10	T.	2. 25	1.25	60	· / T	m	. 30		m	1.88	.50				. 55				. 10	1.60	2.30	40	.30		1.00			. 70		12.
Antioch	Red	.08)	.33	. 20	. 26	.00	1.	.45	.01	.81	1.	1.00	1.				. 18			***	.65	.70	1.50	.11			4.11		.41	. 41		6
Voca Island	Coast	. 12	2	1.20	1.30	1.50	1.32	.32				. 55		. 45									1.30	.85			. 10			1.10	1.00	. 10	11.
Baton Rouge	do	T.	. 15	*	*	9 45	2 00	8.78				. 10	1.20	. 25	.01			. 52	. 10			45	2.15	1.38	1.04			1. 26			. 65		17.
Burrwood	do	1.	.40		.00	1.88	. 12	2.22	.20			30		.30	75			. (5				. 45	1.60	4.00		****	. 53	1.20		.00	. 82	.11	8
Cades	do		.08	T.	3. 10	1.31	. 93	. 10				1.04	. 03	.35				. 47				1.28	2.54	2.40			. 67	.78		T.	. 60		15.
Calhoun	Ouachita	T.	. 17	. 75	.35	1.00			.37			. 28						. 45				1.20	1 00	. 90	1.34		. 20			.80			7.
Carrollton	do	1.31	33	1.17	96	1.38	2.72	.47	.01			1. 58	.07	47	05			. 40				2.34	.75	1.09			- 34	1.60		. 08	1.20		11
Cheneyville	Red	. 03	2.00	2.55	.05	2.50							1.80				.70						2.00	2.03				.74			.70		15.
Cinclare	Coast	. 10	. 15	3.90	2.50	. 50	1.90				.10	1.10	.40				. 50					3. 10	2.40	1.20			1.60			. 60			20.
Clinton	Ougobite	T.	.05	1 38	3.25	.95	. 20	. 88	T.		T	T.	1.50	. 27				.33	T.			79	1.72	1.40	.72			1.04		76	- 58	T.	13.
Columbia	Red	. 01		1.00	. 90	. 90			.00									. 20												. 10			9.1
Covington []	Coast				1.20	1.60	.75	1.60					. 42	.35					. 25				.74	1.40	1.14			1.60			.80		11.
Dodson	Red		. 92	1. 15	. 40	1.01			. 19			1.10						. 48				1. 25	.66	1.80	0.00		.10	0.70		.74			9.1
Dutchtown II	dodo		. 88	2.00	1.45	4.00	3.00	5. 50 T.				.80	1.20	. 90	1		. 75	. 13	1.40			1.00	1.65	1. 10	2.03		1.30	2.70	1	.40	. 00	. 20	14.
Columbia. Columbia. Covington Dodson. Donaldsonville Farmerville.	Ouachita				*	*	1.58		. 45		.70						.40				.34	.90	1.80	. 12			. 20			.80			7.
Franklin	Pearl		10	T.	3.80	1.80	1.65	3. 18	. 02			1 40	. 54 T	. 40	.05	T.	****	40	. 00		****	20	80	3.90	.00	****	20	65		10	35	T.	15.
Grand Cane II	Red			1	1.31	. 25	1.00			. 25		.91	.08					. 22				1.14	.84	. 98	.01						.45		6.
Grand Coteau	Coast				2.00	1.75	. 25								*	*	*	*	*	*	*	*	*	*	*	*	*	8.00)	.80			12.
Gueydan	do	. 10	.20	1.80	1.35	1 70	. 45		****		.10	1. 15		90		***	. 40		****			3.25	70	9 40		. 10	1.50	000		1.00	1 45		11.
Houma II	do	30	. 20		1.05	1. 10	2.40		****			35	36	16				. 25				1.00	1.80	. 10		1	1.30			1.00	1. 10		10.
Jena	Red		. 80	2.50		1.15			. 12		.96						. 50				*	*	*	3.80			5	l		.87			11.
Jennings	Coast	9/		1 10	3. 17	2.21		. 22	30		1 00		1.77	.25			50	.32			***	50	4.75	1.94	. 04			1.08		80	-81	****	17.
Franklin - Franklinton Grand Cane - Grand Coteau Gueydan - Hammond Houma - Jena Jennings - Laark Lafayette - Lakeside La Rose (near) Lawrence - Leesyille	Coast		. 01	. 25	3.90	. 53	. 10	.66		. 02	1.00	. 29	1. 13	34	. 03			. 29					3.15	2.56	. 14		. 16	1.2	3		.90		15.
Lake Charles	do				1.00	2.10							2.00)								. 50	2.05						23				7.
Lakeside	do	m	.70	.28	2.67	1.38	2 00	70			1	1.46	. 15	.30	7	. 90		95			***	2.45	1.27	1.95				1.2		.82	55	T	15.
Lawrence II	do	1.	. 90	.67	.03	1.00	1. 27	3.30	.02	1111	1::::	. 30	25	. 18	.11	.06		. 20	. 23				.48	.78	. 15			. 88	8	.09	.75	A .	9.
Leesville	Sabine Red Sabine Red																																
Liberty Hill	Red			.85	. 40	. 62			.32	T.		1.00					****	.21	90			1. 15	.60	1.11			. 13			. 73	. 10		7.
Logansport Melville	Red		T.	. 45	4, 20	1.80	. 10	. 40	****	T.	T.	T.	1.90	10)		. 65		. 20			. 00	3.30	2.20	. 25		T.	1.00	0		.95		17.
Merryville	Sabine																																
Minden			. 12		. 65	. 18	T.		. 60	. 45		. 80		703			. 40	. 31				. 56	. 30	1.50	. 10			T.	4	T.	.52		6.
Horgan City II	Coast.	1.	.22		33	1, 16	1.68	1.83	.00	. 30		T.	. 40	1.			. 02	. 40	.49			. 32	. 66	. 63	.50)	T	1.50	0		. 00	T.	9.
Napoleon ville	do	. 90)		. 60	1.90	2.80					. 65	. 50)		1						1.60	1.50	. 85			2.2	5		. 60			14.
Newellton	Mississippi	(F)	. 52	. 75	1.50	2.27	1 00		700	T.	T.	1.20			70		0.	. 60				1	9 90	2.05			3 6	3:	2	. 63	. 33		10.
Monroe Morgan City Morgan City Morgan City Mapoleon ville New Orleans (1) New Orleans (2) New Orleans (3) New Orleans (5) New Orleans (6) New Orleans (6) New Orleans (7) New Orleans (8) Delousas Paradis. Pearl River. Plain Dealing Reserve Reserve	do.	15	. 05	. 04	73	2.01	3, 19	. 23	T.			36	. at	49	01	.01	. 00	. 18				T. 78	. 98	. 79			1. 1	3 .0	5	79	. 10	.04	11
New Orleans (2)	do	. 10	.28	.02	.82	1.50	3.38	. 02					. 40)		. 02		. 22					*	1.72				. 1. 1	7		1.11	.06	10.
New Orleans (3)	do	. 04	. 15		. 79	1.34	2.30	. 42				. 37		. 3€	. 01			. 08					1.00	. 52			. 9	6		. 68		. 04	9.
New Orleans (5)	do	. 06	.27	05	. 69	1.37	2.82	. 19				. 36		- 38	. 02			. 26					1.00	. 58			1.0	3 .00	7	. 88	. 06	. 04	10.
New Orleans (7)	do	.00	.34	.03	. 81	1.85	2.66	. 05				. 42		49	. 03	. 01		. 11			1		1.01	.74			1.1	8 .0	6	. 75	. 07	. 03	10.
New Orleans (8)	do	. 08	. 26		. 75	1. 92	2.90	. 05				. 37		. 40)			. 46					1.25	. 75			. 1. 1	0		. 75	. 06	. 03	11.
pelousas	do		T.	. 34	6. 10	1.36	. 07	.34				. 11	1.71	. 24			20	. 82				04	3.89	2.00	. 16		.0	. 8	0	11	. 83	. 12	19.
Pearl River	do.,	T	. 10	.08	T	. 64	1.39	1.82		T	T		. 26	16	3	T	. 30		.22			. 80	.38	1.50	1.52	2		1.6	8		1.08		10.
Plain Dealing	Red			. 40					. 60			.21										. 50	.54	. 14			0	4		51			3.
Rayne I	Coast			.72	2.60	1. 10	. 12	. 45		T.		. 20	1.90	.30				.30					4. 25	2.40	. 10			2.0	0		. 85		17.
Richland Plantation	Red	1.00	90		1 69	1.00	1. 64	Z. 10		19		20	- 46	3 . 16				.50	. 62		1	20	1. 25	2.57	. 16		0	0		. 65	. 02		11
Robeline	do	1.00	1, 20		1. 40	. 80					1.1	1.30	.50	0.0	5			.50				. 60	1.00	1.30	. 0	5)	9
Ruston. t. Francisville	Ouachita	. 28	3	. 94		. 77			. 49			. 89										1.30	1.00				1	1		. 80			6
t. Francisville	Mississippi.		. 05	. 15	4. 12	1.37	. 07	. 75	T.			. 13	1.77	. 28	. 72			. 56					2.68	2.30	. 25			1.9	2		.81		16
chriever	Red	. 00		.42	TP	. 80		2.90	. 59		0	7 85	. ot	. 41			. 24		. 34		2	1 60	73	.80	. 40	1	0	1		. 30	1 . 24		4
immsport	do	. 02	. 10	.20	2.33	1.65	. 20	. 91		. 08			1.31	1 .25	8			. 48					2.08	2.70	.27	7		8	0		. 85		14
immsport. So. University Farm	Coast	T.	. 10	T.	. 10	2.00	2.70	.33				. 30	. 15	. 47	1 . 15	5		. 20				. 00	1.70	.20						T.	2.00	.20	10
Sugartown	do Ouachita. Mississippi Coast. Reddo Coast. do Mississippi Coast. RedRed.	. 30	1.00	2.60	2 10	1 20				90		1. 50	. 28	3				51				1. 20	1. 46	1. 20	20	2	. 6	3	0	. 58	96		10
Walker	Coast.		. 76	2.11	1.62	. 80	2.30				1	1. 12	3 . 12	3	. 39)		. 09					2.00	1.90	3		. 1. 1	2		. 1.66		. 02	16
mnsboro	Red		1	1	1	1	1	1	1	1	1	-	1	1	1			1	1	1				1	1	1			1	1	4	1	1

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

‡ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3 .- Maximum and minimum temperatures at selected stations for December, 1912. District No. 7, Lower Mississippi Valley.

			Colo	orado.				New !	Mexico).		Te	xas.						Kar	isas.						Okla	homa.	
Date.	Lat	mar.	Lead	lville.	Pue	eblo.	All	pert.	Cim	arron.	Ama	arillo.	Par	is. §§		dge ty.		lin- od.	Io	la.	Lib	eral.	Wie	hita.		rd- re.§§		rtles- ille.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1 2 3 4 5	56 50 50 60 49	34 14 20 17 24	22 28 34 31 14	1 1 6 7 - 6	51 55 54 58 34	18 15 23 18 13	51 52 62 55 48	15 17 12 13 11	48 52 49 55 33	31 10 21 8 19	52 52 53 62 41	31 22 33 26 22	64 60 49 58 72	52 37 36 38 47	55 49 55 62 38	25 18 29 27 14	57 46 55 55 49	40 19 34 22 22	58 45 44 54 57	37 27 31 33 22	55 57 55 65 39	17 33 20	50	36 27 37 33 21				
6 7 8 9	45 55	9 10 21 13 22	13 32 29 30 27	-11 - 4 - 4 6 3	33 48 44 55 45	7 15 21 13 24	33 45 47 52 53	11 9 22 21 25	21 40 39 49 46	6 4 15 14 15	25 38 44 45 46	16 12 24 30 28	45 54 41 41 51	29 27 27 28 28	38 53 37 55 44	14 15 20 20 25	37 55 46 57 53	12 18 21 17 27	30 48 34 41 47	19 21 14 13 32	37 54 42 52 46	14 11 24 17 28	31 47 36 46 45	19 22 21 19 33				
11 12 13 14 15	37 40 52 61 50	26 13 17 17 17	27 37 45 39 46	2 8 16 18 14	39 49 60 66 43	19 20 21 25 20	50 48 63 70 65	13 19 17 32 30	41 45 58 64 56	19 12 10 17 18	37 45 56 66 60	20 17 22 26 32	45 46 52 58 51	38 33 24 24 31	40 48 60 66 53	20 14 20 23 28	39 49 57 67 56	18 11 23 20 27	35 38 44 53 56	23 15 29 30 29	40 49 60 70 55	17 22	35 42 46 38 54	26 19 28 30 30				
6 8 9	50 45 45 43 35	20 19 16 20 10	16 10 28 16 12	7 5 - 4 3 -12	49 41 56 47 30	21 24 11 18 7	59 56 49 54 44	26 22 14 17 15	49 38 52 53 37	22 13 10 19 3	56 46 50 56 39	32 28 23 28 18	56 62 52 64 55	38 34 33 27 29	53 47 46 48 39	29 24 23 24 15	53 47 44 50 42	32 21 21 26 14	48 45 35 50 40	31 30 23 24 24	55 49 48 42 50	28 25 21 19 13	49 45 41 50 39	32 29 27 25 25				
11 12 13 14 15	35 34 40 56 45	5 9 9 10 9	14 17 29 25 18	$ \begin{array}{r} -12 \\ -14 \\ 1 \\ 8 \\ -8 \end{array} $	31 32 42 57 37	1 8 6 14 13	43 47 60 58 62	- 2 22 12 11 10	28 25 34 53 46	1 11 -1 0 12	39 26 34 34 44	16 20 10 9 16	43 42 41 51 56	36 35 31 27 24	40 40 47 50 49	16 18 13 18 15	45 44 49 51 46	10 15 12 21 12	45 45 47 53 52	15 16 21 24 29	41 40 48 59 53	18 20 13 9 13	42 43 45 52 47	25 26 23 24 25				
86 88 19 10	58	8 14 8 18 14 14	19 39 38 19 23 22	-10 6 5 - 4 5 1	40 52 51 46 56 54	3 9 15 18 26 10	58 60 58 56 60 62	16 19 17 22 18 11	39 44 51 43 54 48	5 13 5 17 30 7	37 43 40 41 51 45	17 17 19 19 18 24	56 54 52 60 61	33 28 28 28 26 34	41 56 52 42 65 49	15 18 22 20 22 26	42 57 56 48 55 52	15 21 26 16 19 20	40 53 55 48 49 52	27 23 29 27 21 31	43 53 53 43 67 49	14 19 14 17 15 19	40 54 57 47 43 49	24 25 30 28 23 29				
Ins	47.3	15.4	25.8	1.0	46, 9	15. 4	54.2	16.7	44.8	12.5	45.3	21.8	53.1a	32.1ª	48.9	20.3	50.3	20. 4	46.5	24.8	50.6	18.9	45.8	26.5				
							Oklah	oma.							_				Misso	ouri.			ı		Bland		Jack	
Date.	Eni	d.§§	McA	lester.	Mang	um.§§	Musk	ogee.	Oklal	homa.	Wear		Wor		Caru		Ironto	on.§§	Lama	ar.§§	Old	len.	Spri		K	у.	Te	nn.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1 2 3 4 5	65 56 57 60 45	29 30 33 35 25	65 64 50 61 65	52 35 35 44 45	67 63 56 61 62	26 24 30 32 31	64 63 54 58 63	52 33 33 42 40	65 51 54 54 55	38 30 38 36 28	64 63 51 58 54	33 28 31 35 34	60 51 58 63 52	43 17 40 20 30	62 62 60 60 66	44 40 31 44 44	59 51 53 58 63	43 36 19 35 50	61 48 45 55 62	44 28 30 36 40	61 58 53 57 69	43 31 26 39 50	57 43 50 53 63	40 31 32 41 22	62 59 54 60 64	44 41 31 42 54	64 61 60 69 65	4 4 5
6 7 8 9	39 40 45 50 56	19 20 31 35 38	45 44 43 43 51	26 25 34 22 36	52 31 31 50 49	27 20 20 24 23	40 50 44 40 53	25 24 30 18 31	31 49 43 44 52	25 22 25 22 33	42 48 47 47 48	24 20 29 23 32	53 53 47 60 50	19 19 27 17 27	62 53 50 44 41	31 32 28 18 24	41 48 41 37 49	22 23 28 9 24	30 45 37 40 50	19 20 22 14 18	59 50 43 40 53	21 24 20 10 30	28 44 35 39 46	19 22 17 14 31	62 45 44 34 40	31 33 34 15 25	50 44 43	2 2 2 2
1 2 3 4 5	55 51 52 54 55	39 36 34 35 32	50 45 48 59 50	34 22 30 35 40	49 41 55 51 56	28 19 20 24 24	50 46 53 58 51	30 21 25 31 36	40 47 42 44 53	27 22 28 33 28	40 46 50 55 46	26 24 29 30 31	45 50 60 65 70	21 17 28 24 20	42 38 46 56 64	32 21 15 25 31	39 32 50 54 61	24 10 15 21 36	37 40 48 55 63	25 12 18 35 33	39 30 52 55 57	24 9 20 32 40	34 34 46 54 51	26 16 26 33 31	39 31 42 52 60	27 16 17 28 32	42 36 45 54	
6 7 8 9	48 55	33 28 29 27 22	50 55 50 52 47	39 29 30 31 32	66 55 56 66 60	26 26 24 25 38		28 31 29 25 24	56 50 48 58 44	32 30 28 31 26	60 52 52 61 47	34 24 27 26 26	58 51 49 56 41		64 65 51 50 55	30 42 35 25 25	52 57 33 48 47	18 32 29 16 24	55 50 33 50 41	29 31 25 23 27	51 53 40 50 47		33 53	34 33 23 23 27	60 61 49 45 51	33 48 34 28 33	59 64 48 47 53	1
1 2 3 4 5	50 52 55	24 25 26 27 24	53 46 47 48 57	31 27 30 20 35	58 59 48 42 44	35 31 21 16 18	47 45 48	25 21 35 19 31	47 44 46 47 54	21 22 29 25 30	45 49	22 22 26 20 27	41 47 54	12 14 16 22 12	41 48 39 38 49	28 26 30 26 25	47 45 38 52 50	11 10 13	46 45 48 53 55	21 19 29 26 27	45 44 45 55 55	19 21 27 24 31	43 51	23 25 29 27 30	41 44 37 31 44	25 23 29 22 22 22	42 40 38 43	3 3 54
8 9 1	55 56 60	25 25 28 29 32 33	50 55 57 49 62 58		44 45 56 54 56 44	16 22 22 23 21 26	45 54 57 52 61 55	31 23 27 37 24 32	43 55 54 51 59 54	28 27 30 28 26 33	45 55 54 50 57 54	26 24 27 31 22 30	43 60 60 48 63 56	19	42 48 56 44 53 58	30 25 34 37 33 33	45 43 57 42 49 52	31 24 12 32 27 28	42 49 57 49 54 53	30 24 24 31 24 25	43 41 62 48 52 50	32 22 30 37 27 37	38 44 55 45 54 48	26 25 32 33 25 35	40 43 51 41 49 52	30 25 29 35 34 34	51 46 54 52 56	1
	52.5				52.5				49.5		51.1					1			48.3	1			45.7				51.4d	1

Table 3.— Maximum and minimum temperatures at selected stations for December, 1912. District No. 7—Continued.

		Tenn	essee.										Arkans	383.											Missi	ssippi	i.	
ate.	Ken	iton.	Mem	phis.	Ben		Corr	ning.		rda- e.§§	Dora	ll do.§§	Fo Sm		Lit		Pi Blui		Tex		Wyn	ne.§§	Clar		Corin	th.§§	Gre	e.§§
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
l 2 3 4	66 60 64	26 44 54	63 61 56 60 67	51 43 38 49 60	59 48 51 57 64	42 32 30 45 23	59 61 54 70 65	46 41 24 38 55	60 56 52 58 74	49 41 25 40 48	66 59 53 64 70	53 45 38 51 50	63 55 48 55 68	48 35 33 47 32	63 62 53 58 68	46 40 33 46 46	66 56 51 64 63	42 43 30 31 41	68 60 50 62 73	51 39 35 34 47	62 53 57 67 68	52 41 30 45 57	63 59 60 65 70	32 48 35 35 54	64 58 62 66 66	30 53 36 36 56	65 61 62 64 71	38 56 43 46 56
5 5 9	62 47 53 40 42	33 33 35 18 24	60 48 46 36 44	34 38 34 22 32	31 46 41 38 51	22 24 19 14 32	64 50 48 44 44	28 35 28 16 27	48 52 50 41 54	30 ,29 23 20 18	53 52 45 41 49	39 41 32 31 35	42 48 47 39 53	27 28 30 21 31	46 54 46 42 50	31 34 35 23 33	49 54 45 39 49	35 33 31 27 26	49 56 47 40 50	32 32 38 31 31	46 51 47 39 46	30 38 30 21 24	51 52 47 40 46	37 37 32 27 27	54 54 46 38 42	46 38 30 22 22	54 53 48 40 49	44 43 34 31 25
1 2 3 4		30 18 11 21 42	44 34 42 52 59	34 26 25 35 39	38 42 50 56 55	24 16 26 33 34	43 38 48 57 62	33 19 15 24 30	43 46 48 58 64	29 20 17 25 26	46 39 51 48 52	37 33 28 30 31	48 46 50 58 51	34 25 25 30 31	45 39 52 59 63	37 29 25 33 36	45 37 51 59 65	33 29 18 18 28	47 40 47 52 59	34 32 21 27 33	42 34 45 54 60	40 24 15 23 34	44 36 48 56 63	34 29 21 21 21 29	42 32 46 52 61	30 24 18 20 24	46 38 49 58 61	30 31 22 21 31
6 7 8 9	61 54	24 40 31 26	54 60 48 52 52	35 44 31 30 38	58 55 36 54 44	32 33 25 25 25 28	59 62 55 54 52	24 41 35 32 24	52 62 47 62 56	28 32 35 28 24	63 71 52 51 57	39 42 39 35 30	60 60 43 59 50	31 34 32 25 30	55 63 49 58 52	37 40 38 27 36	59 66 52 60 56	30 57 37 24 25	57 58 52 64 58	36 35 34 24 28	53 58 40 45 53	30 43 34 23 27	55 64 52 55 55	31 36 41 26 30	58 61 48 48 56	30 33 42 26 26	60 68 53 57 57	3 3 4 2 3
1 2 3 4 5	45 45	26 24 29 24	42 40 37 46 50	32 33 32 29 35	44 42 44 49 50	25 18 29 25 32	45 45 41 42 50	25 17 31 11 24	45 50	31	38 37 38 54 56	29 32 33 25 25	45 43 41 50 53	34 28 31 23 29	44 41 36 54 51	33 32 31 28 32	39 40 37 54 56	29 31 32 26 25	38 40 42 54 57	32 32 31 34 25	45 44 44 49 50	30 28 33 23 29	37 41 39 52	33 33 32 29	38 38 37 49 50	34 31 32 30 24	38 38 41 53 55	34 33 34 22
6 7 8 9 1	41 52 42 50	11 26 21 34 34 33	49 45 54 48 52 53	36 31 36 41 38 39	42 48 55 47 54 52	28 26 32 34 26 34	46 47 56 52 66 55	26 24 22 37 33 33	50 49 50 54 56	29 20 21 29 26 30	52 53 57 57 51 63	26 28 26 26 36 30	46 50 56 52 60 57	32 27 27 37 30 34	48 51 56 50 56 56	37 31 32 37 31 35	48 56 57 50 56 60	25 28 26 26 26 35 29	52 57 56 50 59 62	41 27 25 31 29 29	48 47 56 49 53 54	35 27 27 27 40 39 35	52 51 55 51 55 58	29 29 27 31 39 33	49 44 52 48 54 54	26 30 25 28 38 36	54 54 57 52 56 59	34 31 26 22 33 36
ns	50.0	29.10	50.1	36. 1	48. 4	27.7	52.7	29.0	53. 1d	28.60	52.8	34.7	51.5	31.0	52.3	34.3	52.9	30.0	53.4	32.6	50.3	32.5	52.4	32.6a	50.6	31.5	53.9	35.

			Missi	sippi.												Loui	siana.									
Date.		cius-	Nate	hez.§§	Vick	sburg.		xan- r.§§		ton ge.§§		ing- 1.§§	La	fay- e.§§		ke les.§§	Mon	roe.§§		ew eans.		be- e.§§		orie- er.		eve- ort.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1, 2, 3, 4, 5,	65 66 70 68 69	34 54 48 50 61	72 73 68 68 68	48 60 55 55 61	67 66 68 66 68	55 55 53 60 62	70 65 63 66 70	41 60 52 57 59	76 71 77 75 66	60 63 60 66 62	70 71 73 74 64	47 64 58 61 64	82 79 80 81 70	56 62 56 62 62	82 86 89 88 79	30 40 50 51 36	65 62 59 66 71	44 55 45 55 60	74 71 72 77 73	59 62 56 65 61	75 62 58 68 71	· 42 52 44 47 48	82 72 72 72 80 73	52 62 60 62 64	68 64 53 61 68	48 45 41 50 54
6 7 8 9 10	50 50 42	56 40 32 30 27	60 51 52 55 54	59 41 34 35 35	64 51 51 47 47	49 41 40 34 34	59 56 52 50 55	56 41 39 36 36	63 52 64 59 61	61 47 43 37 38	64 59 64 60 61	60 58 49 39 34	69 56 57 56 64	61 46 42 38 38	75 83 82 80 78	33 31 30 43 41	60 52 46 48 48	46 43 35 33 33	66 66 61 53 58	61 51 50 44 43	61 65 55 53 49	49 43 40 38 38	66 60 61 60 70	48 57 50 42 38	54 49 43 46 50	40 39 35 38
11 12 13 14 15	51 55	34 31 31 27 36	46 37 51 62 65	46 28 33 37 48	49 41 50 53 56	41 36 34 36 45	52 42 50 57 59	40 37 34 34 35	56 43 46 52 65	53 39 35 35 43	60 45 47 58 66	36 40 35 36 39	59 42 46 58 66	43 40 34 35 38	74 75 80 78 75	40 36 38 40 39	48 44 52 59 54	44 34 30 31 35	68 51 45 56 61	51 41 36 45 49	48 41 55 59 63	40 38 29 28 32	74 48 46 54 62	39 44 37 38 41	48 41 51 59 52	40 37 32 36 44
6 17 18 19 20	68 55 55	31 31 44 25 27	61 49 52 41 52	45 49 30 41 32	61 70 55 57 60	38 55 40 33 43	66 70 56 60 62	40 40 44 30 30	68 72 63 64 67	40 55 45 35 37	66 63 60 64	37 38 45 30 31	68 74 59 60 71	46 49 45 31 33	77 79 80 79 77	27 28 30 50 32	64 72 56 62 61	33 48 42 27 36	66 68 59 57 64	44 55 48 42 42	69 72 56 63 66	35 38 39 25 35	72 68 62 63 69	38 40 62 32 32	63 71 53 62 60	36 48 40 35 39
21	42 44 52	36 32 33 32 24	45 52 40 45 41	38 32 40 30 36	51 41 46 52 57	39 38 37 34 34	53 60 44 51 56	40 41 40 34 28	59 54 55 51 59	52 47 52 35 34	66 52 64 59 63	31 46 47 40 31	63 56 61 59 66	45 47 48 40 33	75 70 76 79 78	30 26 27 30 36	42 40 40 53 58	40 36 36 30 26	67 60 70 51 57	50 48 44 42 42	56 45 40 56 63	36 34 35 28 25	71 60 68 57 66	35 49 50 42 34	44 40 41 53 57	38 34 34 32 31
26	51 54	36 31 24 27 42 37	38 41 52 35 47 55	34 28 30 28 26 40	58 51 56 54 53 60	45 34 34 45 43 42	59 52 56 52 53 65	30 33 30 31 41 40	60 54 58 62 53 68	49 38 32 40 45 45	69 56 59 62 53 63	41 40 29 29 49 44	61 52 61 67 60 77	35 37 30 31 45 45	76 79 69 70 79 72	30 27 28 26 30 33	54 55 58 52 58 70	39 31 28 44 40 35	65 54 55 66 55 62	50 43 41 47 48 48	56 53 60 53 58 64	27 26 24 25 39 33	66 54 64 64 55 62	37 43 32 32 50 45	53 54 56 54 59 60	38 30 34 44 39 36
Mean	55.1	35.6	52.4	39.8	55.7	42.2	57.5	39.6	61.1	45.9	62.0	42.8	63.9	43.6	78.0	34.5	55.8	38.5	62.2	48.6	58.5	35.9	64.5	44.7	54.4	38.9

*, b, *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§§ instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which is almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.

B. BUNNEMEYER, District Editor.

GENERAL SUMMARY.

Weather conditions for the current month closely resembled those for December, 1911. They were marked by persistently cold weather throughout the district and by frequent and heavy precipitation in the southeastern portion of Texas. In the western half of the district the sunshine was abundant and there were but two general storm periods, each of short duration, which gave slightly less than the normal amount of moisture. In the eastern half the sunshine was decidedly deficient and the number of rainy days large, rain occurring daily from the 1st to 12th and from the 20th to 23d, and at intervals during the other parts of the month. While the precipitation averaged above the normal in Texas the area of excessive rainfall was confined to upper coast and adjacent interior counties where the monthly amounts ranged from 6 to over 16 inches, the latter amount being the heaviest ever recorded in the State in December. The precipitation was, however, generally well distributed throughout the month and most of it soaked into the ground or remained on the surface as snow as evidenced by a small run-off. Along the upper Texas coast the lowlands were submerged during part of the month.

The average number of days with 0.01 inch or more of precipitation was 3 in Colorado and New Mexico, and 7 in Texas. The greatest and least monthly amounts of precipitation were, respectively, in Colorado 1.11 inches at La Veta Pass and a trace at Manassa; in New Mexico 2.00 inches at Glorieta Ranch and a trace at Los Lunas; and in Texas 16.57 inches at Mont Belvieu and 0.15 inch at Mount Blanco. Excessive precipitation of 2.50 inches or more in 24 consecutive hours occurred at but 6 stations, all in Texas, the heaviest being 3.60 inches at Columbus

The snowfall was heavy in portions of southern New Mexico, but was light at the higher and northern stations, and the stored depth was small. At the close of the month the depth on the ground in the extreme upper Rio Grande watershed at an elevation of about 8,200 feet was only 6 inches, which is 7 inches less than a year ago. The greatest monthly fall in Colorado was 17.5 inches at La Veta Pass, in New Mexico 36.2 inches at Glorieta Ranch, and in Texas 4 inches at Seymour and at Snyder.

TEMPERATURE.

The average daily temperature deficiency was 3° in Colorado, 3.8° in New Mexico, and 3.9° in Texas. There were no marked cold waves during the month and the changes from day to day as well as the monthly range of temperature were small for the season. Over a large area extending well inland from the Texas coast there were no killing frosts or freezes during the month. The

warmest weather occurred between the 1st and 5th and between the 13th and 17th, while the coldest occurred between the 6th and 8th and between the 21st and 25th. The average diurnal range of temperature varied from nearly 12° on the Texas coast to about 39° in the extreme northwestern portion of the district.

The highest and lowest temperatures reported were, respectively, in Colorado 53° at Manassa on the 15th and -29° at Hermit on the 6th; in New Mexico 72° at San Marcial on the 3d and -22° at Virsylvia on the 22d; and in Texas 88° at Bay City on the 5th and 6° at Plainview on the 24th. The local monthly means ranged from 9.3° to 17.5° in Colorado, from 14.2° to 40.4° in New Mexico, and from 36.4° to 58.8° in Texas.

PRECIPITATION.

The average precipitation for the Rio Grande watershed was 0.70 inch, which is slightly less than the normal amount. The deficiency of precipitation was most marked at the higher mountain stations in New Mexico, while moderate excesses occurred below Marathon, Tex. Much of the precipitation in the upper portions of the watershed was in the form of snow, but while heavy snowfalls were reported from some New Mexico stations, the stored depth at the close of the month was small.

The precipitation over the Rio Pecos watershed was light in New Mexico, except between Roswell and Fort Stanton, and south of Carlsbad, where the monthly amounts exceeded the normal. The Texas portion of the watershed received about double the usual amount of moisture, bringing the average for the watershed as a whole up to 0.78 inch, which is very nearly the December normal.

The Texas watersheds received more than the normal amount of moisture, the excesses of the various watersheds ranging from 0.04 inch for the Sabine to 2.41 inches for the Neches. The rainfall was heaviest over the upper coastal plains and over the lower portions of the Brazos, Trinity, and Neches watersheds. The following are the average amounts in inches and hundredths for the various Texas watersheds: Nueces, 2.37; San Antonio, 2.43; Guadalupe, 2.78; Lavaca, 3.40; Colorado, 2.18; Brazos, 2.59; Trinity, 3.65; Neches, 7.25; Sabine, 3.82; and coastal plains, 4.39.

RIVER CONDITIONS.

The streams of the district were practically at low water mark during the month. There was, however, ample water in the lower Rio Grande for irrigation and other purposes. Rises occurred in the Guadalupe and Colorado during the first decade, and in the Trinity during the last decade, but they were unimportant.

Table 1.—Climatological data for December, 1912. District No. 8, Texas and Rio Grande Valley.

			years.	Tem	perature	, in e	legre	es Fab	renh	eit.	Prec	ipitation	, in in		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy of 0.01 inch or mo	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o I cloudy days.	Prevailing wind d	Observers.
Colorado.													11.							
Blanca	Costilla	7,865 10,015	3 5	16.6		44	15	-16	11	56	T. 0.91		T. 0.46	T.	0	27 21	3 10	1 0	W. SW.	Lewis F. Botens.
Jarnett	Costilla	7,576	19	13.1	- 4.6	43	3	-21	7	47	0.18	+ 0.07	0.12	8.8	3	17	11	3	nw.	Mrs. Ida M. Lively. Chas, Speiser.
Iermit	Hinsdale	9,843	5 2	9.3		44	14	-29	6	60	0.44		0.18	8.0	5	23	0	8		Marion Mason.
A Veta Pass	Costilla	9,000 7,700	6	17.5		53a	15	-13	71	58a	1.11 T.		0.82 T.	17.5 T.	0	26 27*	5 3ª	0 0a	w. ne.	Clara M. Wright. J. B. Chapman.
latoro	Saguache	9,675	5								1.06		0.39	17.0	7	23	5	3	W.	Walter R. Hook.
aguachean Luis	Costilla	7,740 7,794	20 21	16.4	- 5.0	48	15	$-14 \\ -20$	77	51 47	0.27	+0.10 -0.01	0.27	6.1	1 2	22a 21	0a	8a	W. SW.	Eugene Williams. P. B. Albright.
Wagon Wheel Gap Ex- periment Station.	Mineral	9, 235	1	13.2	- 2.8 - 5.0 + 0.2	38	15	-14	6	35	0.57	- 0.11		10.9	8	21	4	6	nw.	U. S. Weather Bureau.
New Mexico.																				
gricultural College lamogordo (near)	Dona Ana Otero		51 15	36.2 35.5	- 6.3 - 5.4	62 59	1 2	8	23 27	43 39	0.30	- 0.14 - 0.15	0.15 0.23	3.5	4 5	19 21	5 5	7 5	nw. sw.	N. Mex. Agricultural Colleg Edward LeBreton.
lamogordo	do	4.320	3								0.71	0.10	0.51	5.0	2					Agent E. P. & S. W. R. R
lamos Ranch	Sandoval Bernalillo	7,800 5,000	36								0.70	+ 0.09	0.28	8.0 T.	3	25 15	13	3	s. e.	Harold H. Brook.
ncho	Lincoln	6,112	3								0.23	+ 0.09	0.17	3.5	2					Pitt Ross, C. E. Agent E. P. & S. W. R. R
nchor Mine	Taos	10,600	1								0.96		0.62	14.0	5	16	6	9	W.	Charles H. Brigham.
rtesiaspen Grove Ranch	Eddy Rio Arriba	3,350 9,000	3				1†	10			$0.85 \\ 0.63$			9.0	7	18 15	15	13	80.	Will Benson, C. E. Junius D. Maupin.
Batemans Ranch	do	8,900	3								0.60		0.20	7.9	5	23	4	4	w.	John W. Bateman.
Berino	Dona Ana Valencia	3,788 6,732	10	93 8	_ 3 4	62	· · · ·	20	99	61	0.35	0.10		4.0	1	15	14	2		J. C. Rishaberger.
luewater	Chaves	4,154	3	36.4	- 3.4	68	4	$-20 \\ -4$	23	61 49	0.16	- 0.18	0.16	7.0	1 2	15 26	14	3	n. sw.	Bluewater Development (William Horner,
apitan	Lincoln	6,348	3								0.84		0.54	14.0	2	26	1	4	SW.	Agent E. P. & S. W. R. R.
arlsbadarrizozo	Eddy Lincoln	3,120 5,429	17	31.6	- 2.4	70 56	15	12	21	50 42	0.82	+ 0.30	0.55	3.0	4 2	19 24	5	8 2	se.	U. S. Reclamation Service Agent E. P. & S. W. R. R.
errillos (near)	Sante Fe	5,700		27.0		52	3†	- 3	7 7 7	46	0.11		0.10	1.5	2	20	8	3	w.	Irving C. Sweet. Frank C. Johnson.
hamalouderoft	Rio Arriba	7,851 8,650	14 10	19.7	-6.3 + 0.3	45 50	13†	- 9 6	7	42 37	0.33	- 1.72	0.12	4.5	3	24 23	6	1 2	SW.	Frank C. Johnson.
orona	Lincoln	6,666	3	30.2	T 0.3	50	13†		7	52	0.78	- 0.59	0.54	8.0	3	21	3	7	SW.	Agent E. P. & S. W. R. R Do.
oyote	do	5,800	3								0.28		0.20	3.5	5	26	1	4	SW.	Do.
undiyo emonstration Farm	Santa Fe San Miguel	6,889 6,800	3								0.70			12.0	4 2	24	4	3	w.	Juan Vijil. Erb & Westerman.
uran	Torrance	6,272	3	31.4		56	15	- 4	7	38	0.43			8.0	4	23	1	7		Agent E. P. & S. W. R. R
scondido	Otero Rio Arriba	4,014	3	99 6	5.0	62 52	1	10	23		0.56		0.21	4.0	4	26	2	3	nw.	Do.
spanolastancia	Torrance	6,590	14	23.8	- 5.9	51	41	- 7 -17	24 7	43 50	$0.28 \\ 0.35$	- 0.02 - 0.31	0.12	8.5	5	19 18	8	9	3. W.	Mrs. Ella F. McBride. George H. Van Stone.
ort Stanton	Lincoln	6,231	35	32.9	- 3.0	60	15	1	121	51	0.12	- 0.72	0.12	2.0	1	14	10	7	nv.	U. S. Sanitarium.
ort Sumnerallinas	Guadalupe Lincoln	3,960 6,635	3	31.9			14	- 8	24	54	0.37	******		4.5	3	21 18	0	13	SW.	Peter Yocky. Agent E. P. & S. W. R. R.
allinas Planting Sta	San Miguel	7,500	5	28.5			14	-1	21	48	0.58			9.0	4	21	9	1	е.	U. S. Forest Service.
lorieta Ranch	Socorro San Miguel	5,700	2				104				2.00		0.96	36.2	5	23	2	6.	W.	Chas. M. Crossman.
larveys Upper Ranch.	Eddy	9,400	3	24. 1			13†	0	7	38	0.47 0.50			10.0	5 7	22 19	5 7	5	w. nw.,	R. B. Schoonmaker. E. H. Byers.
londo Reservoir	Chaves	3,904	3	35.4		69	14	- 2	71		0.74		0.42	7.5	3	22	5	4	S.	U. S. Reclamation Service
mez Springs	Sandoval Eddy	6, 100 4, 300	2	27.8		68	31	11	21		0.40			4.0	3	23 21	3	5	SW.	Mrs. L. L. Shields.
nowles (near)aguna	Valencia	5,840	7	25. 2			11		7	47	0. 50			8.0	5 2	21	4		SW.	J. W. Mosley. Gus Weiss.
agunita	Guadalupe	4,500	7	32.4		. 58°	15	- 5	7	430	0.24		0.16	4.5	2		7	6	W.	P. A. Turnbull.
ake Valleyakewood (near)	Sierra Eddy	5,412 3,170	7	38.9		70	11	14	7	52	0.95			10.8	6 2	21 27	5	5	sw.	William P. Keil. Mrs. J. K. Boyd.
anark	Dona Ana	4, 156	13								0.50	+ 0.03	0.30	4.2	5	18	0	3	W.	Agent So. Pac. R. R.
as Vegas	San Miguel	6,385	25	28.7	- 4.0	64	1	- 9			0.18	- 0.43	0.12	3.2	3	28	3	0	SW.	N. Mex. Normal Universi
os Lunas (near)	ChavesValencia	5,000 4,900	23		- 5.8		31	- 3	28	48	1.85 T.	- 0.44	0.95 T.	8.0 T.	0	16	6 15	0	SW.	H. G. Liston. Richard Pohl.
agdalena	Socorro	6,557	7	27.4		55 52	14	- 3 - 2 6	28 7	36	0.76		0.54	12.0	3	20	6	5	W.	William Pender,
escalerolineral Hill	Otero San Miguel	6,627 7,050	1 7	30. 4		. 52	15	6	71	36	0.49		0.26	5.3	4	21	23	6	SW.	Rev. R. H. Harper. W. M. Nelson.
onterey	Otero	4, 436	7 3								0.22		0.20	2.0	2	25	4	2		. Agent E. P. & S. W. R. I
ountainair	Torrance	6,547 3,989	10		- 4.9		2	-14	7		1.22	- 0.11		13.6	2 2 5 3	20 18	2	9	SW.	Miss Julia Hill. Agent E. P. & S. W. R. F
ewmanoria	Otero Dona Ana	4, 114	3								0.34			1.4	3	18	0	13	W.	Do.
rogrande	Otero	4, 171	3								0.42		0.25	3.0	2	17	7	7	W.	Do.
seuratis	Lincoln Eddy	5,016 3,100	3								0.89 0.92			9.0	6	22	2	7	nw.	A. M. Hove.
tto	Santa Fe	6,200	3								0.10		0.10	2.0	1					. Benj. Lasswell.
asturalacitas (near)	Guadalupe Bernalillo	5, 285 8, 000	3				15	- 10	6 7	38	0.42			5.0 19.5	2 4	27 21	9	3	W.	Agent E. P. & S. W. R. F. George C. Ellis.
lainview (near)	Chaves	4,300	1	37.6		62	30	10	23	45	0.52			3.2	5	20	5	6	w.	. L. P. Adair.
ed River Canvon	Taos	8,965	5	19.0		. 50	28	- 10	31	54	0.30		0.18	5.0	3	20	10	1	80.	Mrs. L. R. Penn.
inconio Grande Dam	Dona Ana Sierra	4,030 4,265	18 22	35.0	- 4.8 - 2.3	63	11	10	231	48	1.28	+ 0.76 + 1.36	0.87	8.0 17.5	3		13	8 5	n. n.	Charles H. Raitt. U. S. Reclamation Service
10 Grande Inds. Sch	Bernalillo	5,000	1	28.0		. 51	3	7 0	241	44	0.10		0.10	0	1	22	3	6	sw.	Rev. A. C. Heyman.
osedale	Socorro	6,910	7 18	29.4	- 7.1	. 55	14	$-\frac{1}{2}$	7	39 46	1.65 1.10	+ 0.55	1.00	23.8 11.8	4	24 12	12 12	5 7	W.	Mrs. J. J. McInness.
oswellan Marcial	Chaves	3,578 4,439	15	32.8	- 7.1	72	3	- 6	24	53	0.64		0.60	8.0	1	27	2	2	n. ne.	U. S. Weather Bureau. Agent A., T. & S. F. R. R Dr. Chas. M. Grover.
an Rafael	Valencia	6,509	15	25.7		. 53	30	-10	23	48	0.60	- 0.03	0.30	7.5	3 5	21	0	10	nw.	Dr. Chas. M. Grover.
anta Feanta Fe Canyon	Santa Fedo	7,013 8,000	39	25.9	- 4.4	53	15	5	6	48	0.79		0.39	9.8	3	21 25	7 2	3 4	n. e.	Section Center.
anta Rosa	Guadalupe	4,624	11	36.5		63	13	- 6	7	46	0.20		0.17	5.5	2	23	4	4	W.	Mrs. E. M. Gregory, H. V. B. Smith, C. E.
enorito (near)	Sandoval	7,500	0,000														0		ne	. James Curry.
ocorrotanley	Socorro Santa Fe	4,600 6,317	20	27.8	- 2.8	68	3	- 2	23	50 45 i	0.65		0.65	2.0	1	24 26	4	7	ne. nw.	J. J. Leeson. George R. Camp.
allque (near)	Torrance	9,820	2																	. A. Rea.
aos	Taos	6,983	17	25.2	- 1.4	55	14	- 2	7	47	0.04		0.03	T.	2 4	22	9	0	W.	Alexander Gusdorf. L. Martinez, jr.
aos Canyonecolote	Lincoln	8,959 6,539	3	29.8		50	14	6	7	28	0.29		0.21	5.5 8.0	4	22	3	6	w.	Agent E. P. & S. W. R. F
hree Rivers	Otero	4,559	3								0.65		0.50	4.0	3	25	0	6		. Do.
ijeras Canyon orrance	Bernalillo	6,214	3	*****	******						0.28		0.10	3.5	3 3 2 5	14	7 2	10	w. nw.	U. S. Forest Service.
res Piedras	Torrance	6, 433 8, 076	9 3	19.6		48	15	- 10	7 7	45	0.75		0.70	2.0	2	25 23 23	4	4	W.	Agent E. P. & S. W. R. R. U. S. Forest Service.
	Rio Arriba	7,935				49	1	0									5 2			Miss Myrtle Rendon.

TABLE 1.—Climatological data for December, 1912. District No. 8—Continued.

			years.	Tem	peratur	e, in	degr	ees Fal	renh	eit.	Prec	elpitation	, in in	ches.	ny days,		Sky.		direc	
Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy 0.01 inch or me	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.		Observers.
New Mezico-Contd.																				
VaughnVirsylvia			3 2	14.2		53	1	-22	99	49	0.46 0.22		0.25	8.5	4	16	10	11	W. 8.	Agent E. P. & S. W. R. R. Dr. I. N. Woodman.
Willard	. Torrance	6,086	16	26.2		57	9	-17	22 7 21	54 43	0.25		0.15	4.8	6	25 18	1 12	5	SW.	Dr. Volney S. Cheyney.
Winsors	San Miguel	8,200	10	26.7	-0.3	52	13	- 5	21	93	0.50	- 0.53	0.15	10.0	0	18	12	1	sw.	James F. Matty.
Texas.															1					
Abilene		1,738	27 18	43.4	-1.6 -3.1	69 70	11	25 20	27 11†	36 43	1.31	+ 0.18	0.53	0.1	6 3	15	5 4	11	sw.	U. S. Weather Bureau. N. L. Bartholomew.
Alice	. Jim Wells	209	1 2			80	1	30	24	36	0.92		0.25	0	5	10	4	17	n.	R. M. Boerum.
Alpine	Brewster	4, 482	14	52.0		78	1	30	7†	32	2.09 9.76	+ 6.08	0.84 2.05	0	10	16	4 2	11 23	n. n.	H. B. Cowles. Alvin Japanese Nursery.
Anahuae	. Chambers	. 23	3								10.12	******	2.55	0	14					Lone Star Canal Co.
Antelope Aspermont	Jack		1	*****			****				0.86	******	0.35	0.5	3	17 22	10	8	n.	Paul Rudolph. Bryant Link Co.
Austin	Travis	593	56	47.9	- 3.2	72	5	31	13	31	2.60	+ 0.26	0.80	0	8	12 12	3	16	nw.	A. Deussen.
Ballinger Barstow	Runnels	1,637 2,573	16	45.2 43.4f	0.0	71 70	17†	23 12	24 19	42 53	1.50	+ 0.25	0.40	T.	4 2	12 26	1	18	n. w.	E. M. Eubank. F. P. Ingerson.
Bay City	Matagorda	53	11	55.8		88	5	34 31	25	42 32	5.48		1.47	0	15	9	0	22 20	n.	E. C. Quereau.
Beaumont Beeville	Jefferson Bee	225	16	53.5 53.6	- 0.2 - 1.1 - 1.7 - 2.0 - 1.1	81 80	5	31	25 27 24	36	1.54	+10.13 -0.29	3.37 0.50	0	13	11 8	0	20 22	ne. n.	John Bender. L. E. Dickey.
Big Springs	. Howard	2,396	14	43.2	- 1.7	80 70	14	19	27 24	40	0.99	-0.29 $+0.55$	0.61	0.7	5	14	8	9	8.	B. Reagan.
Blanco	Blanco	1,350 1,412	16 20	46.4 48.3	-2.0 -1.1	65 72	11		24 22	31 35		-0.13 + 0.13	0.40	T.	9	11 7	10	10 21	n. n.	R. C. Crist. F. W. Schweppe.
Booth	Fort Bend	81	11								7.07	+ 3.33	1.40	0	14	10	0	21	ne.	T. R. Booth.
Bowie Brady	Montague McCullough	1,113	17	43.4 55.6	- 1.8	71 81	15	23 28	24 7†	40		+ 0.06	0.50 1.10	2.0 0.1	3	15 18	4	12	n. 8.	Craig Anderson. Prof. J. O. Wallace.
Brazoria	Brazoria	25	23	55.8	- 0.2	82	5	30	19	40	6.52	+ 3.22	1.64	0	15	14	2	15	n.	Mrs. M. A. Stevens.
Brazos			3 27	48.8	- 4.0	73	5	31	24	29		+ 3.50	0.76 1.52	T.	13	11 6	13	7 24	n. n.	Mrs. M. A. Stevens. Robt. E. Boyett. Mrs. B. F. Sloan.
Bridgeport	Wise	754	3								0.66		0.40	0	5	10	8	13	S.	Claud Strange.
Brighton Brownsville	. Nueces		19 48	54.8 57.6	-3.0	80	4	32	24 28	34		+0.78 + 0.06	0.70	0	7 15	13	1	17	n.	G. H. Ritter. U. S. Weather Bureau.
Brownwood	Brown	1,342	20	44 8	$\begin{array}{r} -3.9 \\ -2.1 \end{array}$	79	15	23	27†	49	2.19	+ 0.59	0.75	0	5	11	8	12	n.	Mrs. Pearl Smith.
Buena Vista	Pecos			44 0		74		26	23	34		******	1.28	T.	16	13	3	15		J. E. Watts.
Carmona	Polk	330	4	44.8		74 73	5	24	25	40			1.40	T.	17	10=		15 12a	80.	M. S. Spitler.
Carrizo Springs	Dimmit		17	40 4			104			9.0			0.07			0				M. E. Cook.
Claytonville	Fisher Bosque	2, 100 671	1	42.4	- 3.1	61	16†	21	24	36		- 0.80	0.27	T.	12	25 10	0	6 17	n. n.	Wm. Lanius. R. M. Jones.
Coleman	Coleman	1,710	18	45.8	- 1.0	72	16	25	24	35		+ 0.36	0.83	0	5	11	10	11	SW.	J. E. Stevens.
College port	Matagorda Brazos	308	22	51. 4 48. 6	- 5.0	74 73	5	28 28 18	24	36	5.33	+ 1.99	1.29	0	16	9 8	10	12 19	n. n.	H. A. Clapp. Prof. G. S. Fraps.
Colorado	Mitchell	2,066	18	46.2	- 0.3	71	16	18	24 27	47		+ 1.16	1.10	0	4					R. M. Webb.
Columbia	Brazoria	34 206	23	*****	******	****	****	*****		****	6.63	******	3.60	0	12	6	5	20	n.	R. B. Loggins. Mrs. Sophie Bridge.
Corpus Christi	Nueces	20	25	54.7	- 1.9	77	3	36		25	1.53	+ 0.21	0.35	0	13	3	7	21	n.	Mrs. Sophie Bridge. U. S. Weather Bureau.
orsicanaotulla	Navarro La Salle	445 425	23	44.2	+ 4.6	70	5	27	24†	30		+ 0.66	0.83	0	11 2	10	4	17	S.	D. H. Winn. Holland Agricultural Co.
rockett	Houston	350	8	48.8		79	5	27		31	5.87		1.54	0	11	11	4	16	S.	A. M. Rencher.
Dallas	De Witt	177 466	22 23	51. 1 44. 0	-3.2 -0.9	70 69	17	29 25	24† 13†	36		+ 0.40	0.92 1.02	T.	10	10	0 2	25 19	8.	H. R. Frobese. G. A. Eisenlohr.
Danevang	Wharton	145	16	53.2	-0.9	80	1	30	18†	38	4.32	+0.58	1.62	0	9	13	3	15	n.	H. P. Hermansen.
Del Rio Devine	Valverde Medina	952 653	6 2		- 4.8	76 78	20	24 26	24	41 42	1.76	+ 0.20	0.56	0	11 8	8 12	6 5	17 14	nw. n.	U. S. Weather Bureau. M. A. Keller.
Dialville	Cherokee	575	8			72	5	26	23 24	33	5.65		1.45	0	10	11	5	15	8.	J. M. B. McKnight.
Dilley Dublin			2 16	43 6	- 2.5	71	94	24	24	38	1.80	+ 0.47	1.80	0	7	12	10	178	n.	John W. Miller. Jno. O. Shafer.
Duval	Travis	820	23	47.2	-5.7	72	2†	30	24	29	2.60	+ 0.22	0.92	0	8	12	3	16	n.	J. C. Edgar.
Eagle Pass	Maverick Eastland	800 1,420	35		- 2.1	76 84	31	26 20	24 24†	39	$\frac{1.95}{2.20}$	+ 1.06	$0.90 \\ 0.90$	Т.	8 5	104	0	13 1	n. s.	Charles Tarver. James A. Beard.
Eastland Edna	Jackson	71 3,762	5 3	47.4		0.8	01	20	241		3.61		1.10	0	8					E. L. Faires.
El Paso	El Paso La Salle	3,762 558	33	40.0	- 4.8	62 70	1	17 30		31 35		- 0.04	0.17 1.10	3.2	5 3	17	9	5 20	nw. n.	U. S. Weather Bureau. Walter Pettit.
fairland	Burnet		23																	R. L. Bush.
alfurrias	Brooks	465	4	55.4 50.6		84 75	1 5	29 30	19 24	43 30			0.61 1.44	0	5 12	9 8	8	14	nw.	W. A. Gardner. Fred W. Laux.
Clatonia	Fayette	483	2	46.0		71	5	25	24	34	4.49		0.89	0	11	10	4	17 17	n. ne.	F. C. C. Carter.
Fort Clark	Kinney	1,050	41		- 5.3	72	1†	25	24	35	1.90	+0.85	0.90	0	5	20	0	11	n.	Post Hospital.
Fort Davis	Jeff Davis	5,000 460	33 44	53.4	- 2.6	83	1	25	24	45	1. 46	+0.77 + 0.37	1.10 0.93	0	7	12	0	19	n.	. C. H. Bird. Post Hospital.
ort Stockton	Pecos	3,050	15	45.2	- 2.6 - 1.0 - 2.0 - 2.6	73	15	22 27 23	23	43	1.70	+ 1.01	1.40	T.	4	10	16	5	n.	H. H. Butz.
ort Worth	Tarrant	670 1,742	17 23	45.5	-2.0 -2.6	74 69	1 15	27	27 24	36	1.95 0.87	+ 0.73	1.14	T. 1.0	7	11	1 4	19 13	s. n.	U. S. Weather Bureau. Arthur Striegler.
iail	Borden			43.2		73	15	22	21	39	1.58		0.94	2.2	3	24	0	7	n.	J. D. Brown.
Gainesville	Cooke	738 69	22 41	43.7	-0.6 -0.9	70 75	1	23 38	24† 12	40 23		-1.36 + 4.88	0.47	0	13	10	7	14	n.	J. L. Hickson. U. S. Weather Bureau.
larden City	Glasscock										0.84		0.70	T.	3	15	3	13	80.	C. W. Cunningham.
latesville	Coryell Williamson	795 750	8 17	47.2	- 4.0	68	1† 5	22 25	30 28	42 38		- 0.20	0.75 0.67	0	16	12 13	12	7 14	n.	John Ryan. Prof. R. F. Young.
Poliad	Goliad	164									2.34		0.65	0	10					W. B. Campbell.
onzales	Gonzales	299	7							- 1			0.70 0.53	2.0	12	6 17	9	25 5	n. sw.	J. M. Johnson. R. L. Gaines.
loree	McLennan	444	3					23	24		1.62		0.64	0	5	11	3	17	8.	John Gorham.
Fraham	Young	1,040	13	44.8	- 1.4	74	1	22	26†		1.31	- 0.06	0.46	1.0	5	15	2	14	n.	C. W. Johnson.
rand Falls	Van Zandt	399	2 2					*****	****		1.10 3.17		1.10	T.	5	12 11	17	16	n.	W. A. White. Jas. Kirk.
rapevine	Tarrant	670	22	46.4	- 1.1	71	1 5	26	24	36	2.46	+ 0.36	0.94	0.5	5	76	10b	12b	n.	W. J. Crowley.
reenville	Hunt Lavaca	550 235	12 20	51.2	-0.6 -2.9	74 75	1	26 31	13† 18†	36 37	2.62 3.18	+ 0.09 + 0.65	1.52	0	3	11 9	0 2	20 20	n. ne.	Mrs. L. A. Regan, Dr. J. E. Lay.
Tamlin	Jones	1,685	1								0.68		0.40	0.5	3					W. S. Carruthers.
Iarlingen Iarper	CameronGillespie	37	1	56.5		81	1†	37	24	35	1.72	•••••	0.78	0	9	5	13	13	nw.	Lindsay Waters. Christian Fritz.
laskell	Haskell	1,553	17	43.5	- 1.4	71	4	20	24	39		+ 0.18	0.50	2.0	3	17	5	9	n.	P. D. Sanders.
lebbronville	Duval	254	5								0.80		$0.32 \\ 2.90$	0	3 7	7		24	n	Henry Edds. J. H. Hancock.
Iempstead	Rusk	500	8											0	10	ní	0 5	15	n.	M. Kangerga.

TABLE 1.—Climatological data for December, 1912. District No. 8—Continued.

			year	Temp	perature	e, in	degre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	day	Number of cloudy days.	Prevailing wind tion.	Observers.
Texas—Continued.			,			-														
lewitt	McLennan	664	17								2.48	+ 0.18	0.58	Т.	11	15	2	14	n.	I. H. Earle. John A. Eakins.
lico	Hamilton	628	9	51.7		76	6	24	24	43	1.89		1.25	0	7 3	10		14	ш.	W. G. Escott.
ondo	Medina	901	13	47.9		73	5	26	24 24	38	$\frac{2.10}{2.35}$	+ 1.03 + 7.09	1.00	0	8	11	3	17	n.	H. E. Haass.
ouston	Harris	138	22	53.6	- 0.9	78	1	35	24	25	10.09	+ 7.09	2.21	0	13	8	6	17	n.	U. S. Weather Bureau. W. Y. Barr.
untsville	Walker Kent	400	28	48.4	- 3.4	71	5	20	25	40	6.10	+ 2.57	1.60	2.5	8 2	8 25	0	23	ne. w.	W. Y. Barr. Wichita Valley Ry. Co.
yton wett	Leon		8	45.8		70	5†	25	24†	35	5.50		1.60	0	5	14	6	11	n.	Earle Adkisson.
nction	Kimble	1,645	11	43.0		74	17	18 25	30	47	1.52	+ 0.49	0.67	0	4	****		177		Judge John S. Durst.
aufmanerrville	Kaufman	1,650	13 16	45.8 45.8	-1.4 -2.3	69 72	5 15	18	27 30	31 42	2.80 0.54	- 0.73 - 1.10	0.84	T.	7 2	12 13	5	17	ne. n.	B. J. Hubbard. Robert E. Horne.
illeen	Bell	1,000		30.0	- 2.0		10	10			0.01	1.10								J. E. Root, ir.
nickerbocker	Tom Green	2,050	8	45.1			4	23	24†	39	1.36		0.90	0.5	6	16	6	9	8.	Jos. Tweedy.
opperl	Bosque	576 276	15								1.85 6.62	- 0.56	0.80 2.75	0	13	9	9	13 18	nw.	T. A. Johnson. August Hermes.
mesa	Dawson	2,500	2 2								0.71		0.30	2.0	4					S. D. Austin.
ampasas	Lampasas	1,026	20		- 4.4		4†	22	30	43	1.77	- 0.06	0.44	0.7	9	14	0	17	n.	Mrs. K. I. Webber.
Parra	Willacy	38 421	10								2.30 2.45	+ 1.23	0.60	0	7 18					Jno. G. Kenedy. Mrs. A. H. Jackson.
aureles Ranch	Nueces	20	12																	Matt Cody.
berty	Liberty	38	8	53.0		80	1	29	19†		11.79	1 0 77	2.40	1 0	12	5	15 12	11	n. ne.	Mrs. Fannie Sneed.
ano	Llano Hidalgo	1,040 86	21		- 5.1	71 82	5† 4	24 32	30 24	40 46	1.75	+ 0.51	0.60	1.0	10 4	12	11	12	nw.	E. W. Torrence. M. D. Wardlow.
ano Grandeong Lake	Anderson	229	7								5.84		1.15	0	9	9	2 0	20	n.	Geo. W. Ellis.
ongview	Gregg	336	26	45.4	- 3.2	70	1†	29	14	32	4.32	+ 0.16	1.55	0	11	13	0	18	ne.	C. A. Propst.
abbock	Lubbock	325	1 5	51.4		72	17	27	25	35	0.38 7.89		0.15	1.1	12	25	2 2 3	22	SW.	A. L. Paschall. T. A. King.
iling	Caldwell	418	23	49.5	- 2.4	72	5†	29	24	31	4.88	+ 2.79	2.00	- 0	14	6	3	22	n.	John Carter.
Gregor	McLennan	713	2								0.68		0.68	0	1	18	2	11	n.	W. H. Whitley.
Kinney	Collin	612 4.043	10	43.9			1	22 12	24 23	42 32	2.15	- 1.66	0.96	1.0	10	13	11	16 13	s. n.	H. Killingsworth. Rev. A. P. Willis.
arathonarble Falls	Brewster	771	4	30.3		00	1	12	40	04	1.33		0.60	0	6	4	0	27	n.	B. E. Cochran.
arfa	Presidio		4								0.85		0.85	0	1					W. L. Jones.
arshall	Harrison	375	11 2	46.4		71	1	26	13	36	4.72 5.29	- 0.14	1.07	0	10	17	6	18	n. n.	W. E. McNabb.
atagordaexia	Matagorda Limestone	12 537	8	43.2		69	5	25	24	34	4.14		1.33	T.	111	9	2	20	S.	Miss Josephine Newman.
idland	Midland		5	43.8		68	14	21	23	38	0.85		0.60	1.0	3	9	16	6	SW.	J. Harvey Clark.
ission	Hidalgo		2 2	58.8		84	1†	36	25	44	1.00 16.57		0.55 2.60	0	12	5 7	13 10	13	n. n.	Myron J. Conway. A. R. Shearer.
ont Belvieu ontell	Chambers Uvalde	65									2.02		0.78	0	10	7	10	14	n.	A. G. Beecroft.
ount Blanco	Crosby	2,750	23	38.2	- 3.1	67	14	12	24	45	0.15	- 0.46	0.05	1.5	5	20	2	9	SW.	Geo. W. Smith.
acogdoches	Nacogdoches	271 720	13 23	45.6	- 2.7	68	1	25 28	25 25	37 32	6.49	+2.18 + 1.08	1.50 0.91	0		124	3		n. e.	Miss Mary Hofmann. J. Giesecke.
ew Braunfels	Comal	510	30	46.8		70	5	28	27	25	4.77	+ 1.10	1.19	0		8	7	16		U. S. Weather Bureau.
anter	Hood	1,000	23								2.02	+ 0.11	0.96	0						E. H. Snider.
arsall	Frio	629 102	6	51 9		79	1	29	25	38	2.51 4.54		1.02	0		ii	0	20	n.	Earnest De Vilbiss. R. B. Pointer.
ercelainview			16	36.4	- 5.5	68	14	6	24	46	0.40	- 0.13	0.19	3.0	4	16	12 12	3	n	J. F. Sander.
ort Lavaca	Calhoun	20	11	54.3	- 1.9	78	1	30			1.78	- 1.09	0.42	0		5	12	14		J. H. Bickford.
0st		2,700 1,591	1								0.62		0.26	1.5		15 18	8	8 7	w. nw.	W. T. Mann. S. M. Davis.
utnamaymondville	Cameron		. 1								1.99		0.41	0		5	11	15	80.	C. H. Pease.
icardo	Nueces	57	3		*****						1 00	1 0 49	0.00			11	0	20	******	P. L. Shaffer. D. N. Garza.
io Grandeiverside		169	8		******		1				6.50	+ 0.43	0.80	0		11 8	1	22	n. n.	Mrs. C. W. Higdon.
oekland	Tyler	136	8								5.70		1.40	0		14	3	14	n.	Mrs. C. W. Higdon. Mack Dunkin.
ockport**	Aransas	12			- 2.6	75				25 36	2.19	- 0.94		0		10	11	16 14	n. n.	Mrs. G. Grewe. W. F. M. Ross.
ossville unge	Karnes	558 308	17	31.0		74	5	29	1			- 0.76	1.43	. 0			44	1.4	Ho	Reiffert & Frobese.
binal	Uvalde	964	8	46.9		71	5†		24	35	2.06		0.85	0	7	2	8	21	nw.	Jas. Johnston.
alado	Bell	1,847	21	30 0	- 7 1	67	29	94	51	33	1.70	+ 0.94	0.73	0		14	3	25 14	n. n.	L. M. Crockett. Sam Crowther.
in Angelo in Antonio	Bexar.	701	27	49.8	- 7.1 - 3.3	74	5	24 31	94	34	2.76	+ 1.20	1.05	0	12	7	5	19	n.	U. S. Weather Bureau.
n Augustine	San Augustine	360	3	48 0		71	5 17	24 36 29 19	26	37	8.54		1.75	0	14	12	3	16		F. A. Wilson,
n Juanito	Hidalgo	588	19	57.0	- 2.9 - 3.2	83	5	36	25 19	34	1.95	+ 1.23	0.81	0		8	0	23 23	nw. n.	J. B. McAllen. Miss L. C. Ford.
n Marcos				45.2	- 3.2	73	16	19	30	39	1.79	+ 0.94	1.12	0	7	12	6	13	n.	Jas. Burns.
inta Gertrudes	Nueces		. 12								2.72 6.17	+ 1.35	2.00	0	2					J. B. Wright, ir.
aly	Austin	201 1,320	6	12 0		69		17	24	44	0.85			4.0		8 2	0	19 29	n. n.	O. H. Albert, S. C. Lee.
ymour		1,320	. 1	39.0		67		9	24	43	1. 12			4.0		14	8	9	n.	J. Allen Weaver.
merville	Burleson	251	3	49.9		. 79	4	27 18	24 30	34	4.96		. 1.80	0	8	12	0	19	n.	Ed. Herbst.
nora	Sutton Dickens	2,200 2,300	8	45.6		. 77	16 14	18 16	30 24	45 42	0.60			T. 3.7	6	119		14		C. R. Myers. J. D. Reagan.
ouramford	Jones	2,300	. 1	39.6		64	11		21	1 34	1.13		. 0.55	T.	3	14	13	4		H. Pratt.
garland	Fort Bend	79	11	52.0	- 1.8	78		33	28	33	8.49		. 2.14	0	13	9			n.	Paul C. Rudat.
itherland Springs	Wilson	424						29	24	31	3.30				3 15	7		19	n.	L. V. Bigham. U. S. Weather Bureau.
ayloremple	. Williamson Bell	583 630		44.8	- 4.3 - 3.0	72 69	5 5	29	24	1 26	3.36		1.22			11	7	13		. W. Goodrich Jones.
heodore	Winkler		. 2								. 0.98		. 0.82	0	2					W. B. Oates.
hurber	Erath		. 2								1.43					***	10	18		J. K. Ball. W. H. Gisler.
ivolivalde	Refugio		17							-	2.01		. 0.35		10	3	10	18		V3 36 Claderon Acres
alentine	Jeff Davis	4,421	6																	. Valentine Development
alley Junction	. Robertson	289	12	20.0				91		24	6.27	+ 3.56	2.15		11	15 13			n. n.	Frank Fitzpatrick. C. C. Zirjacks.
ictoria	. Victoria		13 23	48.4	- 2.9	79	5	31 26	24 23	34 † 33	2.74	-0.02 + 0.24	0.75			16	0	15		E. H. Hall.
axahachie	Ellis	556	15	43.2	- 2.9 - 2.5 - 2.1 - 3.5	70	5	24	24	† 41	2.08	-0.40	0.70	T.	8		3		n.	C. D. Itongsere.
eatherford	. Parker	864	23	42.8	- 3.5	69	1	25	24	36	2.12	+ 0.14	0.85	0	7	11	0	20		Miss J. Stickfort.
ills Point	. Van Zandt	524	. 7	43.8		. 69	5	24	25	33	3.51		. 1.20			8	5	18	n.	W. W. Gibbard. Ed P. Eason.

^{*,} b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 8, Texas and Rio Grande Valley.

Stations.	Watershed.				,					_			,			Day	of me	onth														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Colorado.																														-		
lanca	Rio Grande.					T.																										
imbres	do	.04	T.		. 23	. 18				T.							. 46	T.		T.		T.										
arnett		. 03	T.		T.	10											04	****	Tr.			****	T.			700	. 03					
ermit					1.	. 82	****	****	****	.05			****			****	.04	.09	T.				• • • •	****		T.	96					
massa	do					T.	T.																									
latoro		. 39	T.		. 11	. 04				.17							. 25	. 03			T.		. 07				T.					
guache	do	T.	****		T.	. 27	T			01							TP.	T.	****													
n Luisagon Wheel Gap	do	****	T.			.25											07	03	****	****		04	T	****		04	****			****	T	T.
Experiment Sta-																						.01									-	1
New Mexico.												-																				
ricultural College. amogordo (near).			.05		****	.08	99	****	T.														. 15									
amogordo	do	.00	. 10	. 20		****	. 51		T.	T		****			****		****		****	****	****		1.	****	****	****	****		* ****			
amos Ranch	do		T.			. 18																	.28				.24	4			1	1
buquerque	do		.47									1											T.									
cho		70	20				. 17	.06													*	****					***					
chor Mine	Pecos	1.	. 12	****	. 62	****	47		20	****	****	****	****	****		T.	****		****		*	. 12	70									
tesia pen Grove Ranch		.06	.02	****	.11	****	.08		. 08						****		.11	.06		****		. 10	1.	****		****	***	1		****		
temans Ranch	do	T.			. 10	.07	.07			T.							. 16					. 20										
rino	do						. 35																									
iewater																							. 16									
az	Pecosdo						. 25			****																						
pitan	do		19	****			.04		55	T.	T				****	****		****	****				10	****	****	****	***					
rrizozo	Rio Grande.		T.		. 28		.00	****	. 00			****					****		****	****			. 03		****	****	****					
rrillos (near)	do			.01	T.	T.	. 10			T.													T.				T.					
ama	do	.11	T.		. 10	T.	T.			T.							. 12															
ouderoft	Pecos						*	. 54															.24									
rona	Rio Grande.		01	04		*	. 49		****		****		****			****	****	***		***	****	*	.21	****	***	***	***			****		
yotendiyo	do	****	.01	.04		. 03	. 16				. 03	****	****			****	* * * *	****	****	****			24	****	****	****	12	7		****		
emonstration Farm.	Pecos						. 18							****		****	****		****			. 11			****	T.				****		
ıran	do	****			*	. 05			T.	T.								***				. 03								***		
condido	Rio Grande.					T.	.21			.08		****					****						.08	****								
panola	do					*	.06		.01			****	****	****			T.	****	****	****	****	***	.07	. 02		· (P)	, 12	4		****		****
rt Stanton	Pecos			****			. 13							****		****	****			****	****		12	****	****	1.		* * * * *		****	****	
	do						. 10					****											.27						1			
	do				.28																					.02						
	do	T.	T.				. 18										T.	T.				*	. 26			. 14						
Station.	Rio Grande.					*	. 96	*	07														-0.77						1			
orieta Ranch	Pecos	T	T.		T	.05	19	-	TO.	Tr.	****		****	****			T.	TO		****	****	09	.37		****	****	20			****		***
Ranch.	1 0000		*.		1.	.00	. 14		1.	4.			****		****		1.	1.	****	****	****	.00	. 16			****	. 10				****	****
llsboro	Rio Grande.																													****		
bbs	Pecos						.02															*										
ondo Reservoir	do							T.																								
nez Springs	Rio Grande. Pecos						. 20													****									****			
guna	Rio Grande.	. 10		.01		****	. 14								****						****	36										
gunita	Pecos						. 16																.08									
ke Valley	Rio Grande.					*	. 45		. 40	*	.05																					
kewood	Pecos						.04		.33						****								T.									
nark	Rio Grande.					*	.08																									
s Vegas	Pecosdo				1.	.90	.12																. 95								****	
s Lunas (near)	Rio Grande.					. 90																							****		***	****
gdalena	do			T.	T.	.08	.54			.14												3	T.					1				
escalero	do	.06	T.	.16		.01	. 26		T.														T.									
neral Hill	Pecos						. 30											T.	T.													
nterey	Rio Grande.				70	T.	. 20	T.	T.	T.													(20)									
	do				Т.	. 36		.18															04	19						****		****
	do			.20		T.	T		The l	T													15	1								
	do			T.		T.		.17	T.	T.													. 25									
cura	do	.01		. 10			.74			.04					****				****		****						****					
is	l'ecos	.14	T.	.06			.11		. 45	T.				.07									.09									
to	Rio Grande.							****							****																	****
stura citas (near)	Pecos Rio Grande.	T	T	90		12	36	. 42		****	****	****	****		****	****		****		****			10			****	T	****	****	****		
inview	Pecos					. 10	.05		.10	T	****		****	****		****		****		****			.10	.07			1.	***	****			
d River Canyon	Rio Grande.				.06	.12			. 20													.12	. 20									
neon	Rio Grande.			T.		*	. 87		T.												****	. 41										
Grande Dam	00	***	T.			*	1.42		. 10	. 62													T.									
Grande Ind. Sch	do		.10																													
sedale	Pecos		T.			. 05	1.00		. 40	. 20													T.									
swell				.02		****	64	.02			****				****		****						. 48			****						
Rafael	do		T		.20	T.	.10		****	****	****		****		****		****			****	****			.30		****				****		
ta Fe	do		T.	T.	T.	T.	.24			. 01							.02						. 13			T.	.39					
ta Fe Canyon	do						.14								****		T.						.03				. 27					
ita Rosa	Pecos						.17								****								.03									
torito (near)	Rio Grande.				****																											
orro	do					****	. 65																m.			(10)						
inley						. 20					****		****										T.									
jique (near)						01	03	****		T										****	****		T				m.		****	****		
os Canyon	do	T	T	т.	.21																		.03			.01	1.			****		
os Canyon	do		T.		. 41	.27	. 48		.09						****							***	.12		****	.01	T				****	
ree Rivers	do		T.			*																	.15									
eras Canyon	do			.10			.08																.10									
rrance	Pecos					. 60	. 10																. 05					T.				
s Piedras.	Rio Grande				T.																	*	. 25									
	do		.02		T.	. 13	24			197	-						181		-	- 1		1	21									

Table 2.—Daily precipitation for December, 1912. District No. 8—Continued.

Stations.	Watershed.											1				Jay	of m	ontil									-						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	-
Tew Mexico-Con.																																	
ughn	Pecos				*		. 25																.12										. 0
rsylviaillard	Rio Grande.						.10		T.																	. 01							
insors	Pecos				. 05	.10				. 05							. 05	T.					. 15				.10						. 0
Texas.				-																													
oilene	Brazos						.01		. 52													.01	. 51	. 03						****			. 1
banyice	Coast	. 49				. 12	Т.		. 52	••••	****		.25										. 18	. 62							****		1
pine	Pecos	T		. 45		9.08			.80	.84		T.										2 04	T.	60			1 69			.04			000
vinahuac	Coast		.28	1.82	1.21	2.00						1.38	.09	. 15				. 05				2.55	.80	. 85			. 26	. 05		. 60	. 03		. 16
permont	Brazos	. 35	Т.	T.				Т.	. 24														. 27										
istin	Coloradodo	T.		. 55	T.	T.			. 13	25	. 20	.80	. 18		T.	.03								.41						. 30			. 2
rstow	Pecce	. 00		****				74	. 40																								
y City	Colorado Neches Coast		. 14	. 20	1.75	1.47	. 02	Т.	T.	Т.		1.64	.92	. 17				. 14				. 67	$\frac{.44}{3.37}$	1.87			. 11	. 32		.02			. 13
eville	Colorado	15		.06	. 07	. 15	7	T.	T.	T.		. 11	. 50	. 28									. 15	.17					T.	T.	. 05		-
anco	Colorado Guadalupe	T.		T.	. 15			T.		. 17	.06	.37	. 40	. 12									. 05	. 12							.14		. 1
ooth	San Antonio Brazos		. 95	. 10	1.40	. 29						.98	. 10	. 28				. 08				.71	. 15	.90			.17	.10	.20		. 16		
wieady	Trinity			. 20	. 03			. 03	26														Т.	. 50									
azoria	Colorado Brazos		. 33	.03	. 49	1.64	. 05		T.			. 75	.11	. 10			. 01	. 14			T.	.85	1.00	. 46			.32	T.		.24			. 1
azos	do	T.	. 19	1.20	1.52	T.			. 15	.06	.08	. 40	. 52									. 45	. 70	. 76 1. 15						.05	. 41		. (
idgeport	Trinity Coast Rio Grande.	. 10	.04	T.		70				. 40	. 08	10	70			. 04	T.				11	39	. 11										
ownsville																							. 16	. 08			T.						
ownwood iena Vista	Colorado Pecos	T.							1.28	. 70													.08	1									
meron	Brazos Neches	. 02		1.37	.02	15		. 11	. 13	.04	1. 16	1.14	. 14	T.	. 05	.01		58			.21	1.00	.82	1.39					. 83	. 12	· ip		-
rrizo Springs	Nueces								1																								
ytonville	Brazosdo	. 15		.06	.04				.88		T.	.07	.03			. 03	.02				T.	. 19	.30	.54						.06			
legeport	Colorado Coast	. 42			T.				.83													T.	. 15	. 13			. 33						
llege Station	Brazos	T.	.02	1.29	. 30	. 10			.04	. 09	.24	1.01	. 35	.01		T.	.01	T.			. 19	.72	. 26	. 44						.26		***	
loradolumbia	Colorado Brazos																														****	****	
umbus	Colorado		.06	10	3 60	0.4						. 06	50	38				T.				. 46	. 65	. 42					T	. 12	.24		
rsicana	Coast Trinity	. 10	. 53		. 60	T.			.08	. 68		. 18		T.		T.	T.					. 08	. 10	. 83						. 10	. 15	***	. 3
tulla ockett	Trinity											1.54	.10	****	****			. 10	****	****		1.27	. 19	.91						.38	****	***	-
ero	Trinity Guadalupe Trinity	. 09	.14		. 32				04	48	. 05	.51	.41	. 25								03	.09	. 12	. 52					T.	. 13		
nevang	Coast	. 30	. 15		1.62							.25	.30				.02				. 50	. 55	. 40								. 25		
Riovine	Rio Grande. Nueces	T.	Т.	1.00	T.	.01	T.	T.	T.	. 10	.35	.75	1.40				.01					.01	. 11				•		.01	. 38			
alvillelley	Neches	T.		. 75	T.	T.			. 48			1	1 90	5							1. 15	1			. 05					. 50			
blin	Brazos	. 26						.02	.89			****	1.00								T.		. 10	.62	.05								
ıvalgle Pass	Colorado Rio Grande.			19				1 1	T.	T.	.17	.92	.11				Т.	****			Т.	. 15	. 05	.20	****				T.	.31			
stland [Brazos	. 10	50		.90				. 40	. 30	56		20							10		15	1 10	.50			10		****	****	****		. 3
Paso	Brazos Lavaca Rio Grande.			.06		T.	.17	.04	.07	T.										. 10			. 14										
cinalirland	Nueces			****			****		****			. 50	1. 10					****		****	****		. 20							****		***	×
lfurriasatonia	Colorado		T.	1 44	T.	. 33	T.	. 12	· m		T.	.11	.61	0.4			т.	03			T	T. .74 .78 T.	. 29										
nt	Neches	T.		*	.65		****	.02	.89			. 42					.02				*	.78	.40	.89						. 42			
rt Clark	Colorado Coast Guadalupe Neches Rio Grande				. 25		Т.	1.10	. 40	. 20	.20	.20	.90						****			Τ,											
rt McIntosh	Rio Grande. Pecos	10			. 10 T				1.40	. 23 T	. 03	. 10	. 93				. 02				т.	. 15	. 05										-
rt Worth	Trinity	.09		. 20	T.	T.	.04		.47		T.		T.			. 01	T.				T.	T.	. 78	.36					T.				-
edericksburg	Colorado do	Т.			Т.		T.		.37		. 34	. 11	.05									1.	. 62	. 94									
inesvillelveston	Trinity		.08										15		T.		T		****	***	T	1.56	92	1. 15		T.	1.29		T.	.30			*
rden City	Colorado	. 12							. 70														T.	.02									. 1
tesvilleorgetown	Brazosdo	. 03		.10	.32	. 03			.75	. 13	. 03	.67	.10	. 13	.03		. 02			****		.01	.03	.30		****		****	****	. 12	. 08		
liadnzales	San Antonio Guadalupe Brazosdo		.06	.34	. 10	70						.35	. 65	.06			****					.35	. 16	. 20			1.07			.04			
ree	Brazos	. 53		.06	. 10		T.		T.										****				T.	. 41					****				
ham																								.35						T.			
nham. and Falls and Saline	Clabina	T.			****				1. 10		TP.					di.	· ir	****				****	T.	1 20	T		T		***	10			-
pevine	Trinity	. 22		.32			. 44		.54													790		. 94									
enville	Trinity Sabine Lavaca Brazos Coast		. 16	1.11	. 60	.05		T.		T.	T.	. 26	. 46							T.	.35	. 16	.30	1. 52			T.			.33			
mlin	Brazos	. 40					mo	TD	. 23					ne									05	.05									
rlingenskell	Brazos	. 19		.05			. 78	T.	. 24	.05			. 22	. 08									.00	.50									
bbronville	Coast		·m·		2.00	T		. 26				. 32	. 22	. 90								.84	.90	T			T			T	.70		
nderson	Neches	T.		.78	. 02				.50		. 76	T.					. 25				1.04	. 24	1.40	.02						. 46			
rlingen skell bbronville mpstead nderson witt co llsboro ndo uston untsville untsville	Brazosdo	. 26	****	T.	.06		.07		T.	.73	T.	. 21	. 02	.01		T.					Т.	. 15	. 26	. 58						. 14			
llsboro	do	· · · ·	13						.72	10	90	20	1 00	15								****	10	1.25						30			*
uston	Coast		1.50	2.21	.68	.06	T.	****	.01	. 10	T.	1.69	. 26	. 10		****	.05				T.	1.37	1. 05	. 82			25		T	. 14			1

Table 2.—Daily precipitation for December, 1912. District No. 8—Continued.

Stations	Watershed.														1	Day	of mo	onth.														
Stations.	watersned.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Texas—Continued.																																
yton	Brazos	.30																					. 20									
ewett	Trinity		T.	1.60		T.				. 40		1.55	T.		****			****		****		.85	1.10						****			
inction	Colorado								. 50			. 67		.08								100	. 27									
aufman	Trinity	. 61		. 40	.04		T.		. 50		T.		T.	T.			T.				. 12		. 24	. 84						T.		
errville	Guadalupe								1	- 1			. 42	. 12																	1	
nickerbocker	Colorado Brazos	. 02	90		· · · ·		T.		.90	.04			T.					****			****	.09	.17	. 14								
opperl agrange	Colorado				T.		04			. 50				1 90									T.	. 55								
amesa	do	16	1.	05	. 10		.04		.00		.05			1.30							. 05	1. 19	00	. 70						.31		
ampasas	Brazos	T.			. 14					.44		.37		.07							05		31							. 05		
Parra	Coast				. 25	. 15						- FM(3)	.30								. 00	50	.30	. 20						.00		
redo []	Rio Grande.		. 02	.06		. 02	02			0.5	0.0	99	.78	.98	.01	.02				.01	. 02	. 03						.02	. 03	.02		
berty	Trinity		. 65	. 20	2.40	1.70				T		1 70											. 97	2.20			T.	. 53		T.	.31	
ano	Colorado	. 11		T.	T.	. 04			. 15	. 27	. 10	. 60	. 10	T.								T.	. 15	. 17						.06		
ano Grande ong Lake #	Rio Grande.			1 00	. 30		. 40					. 50	. 10																			
ongview	Trinity			1.00	42	19		03	10	. 00	****	. 70	. 16									. 92	. 27	1. 15	T.						. 40	
ubbuck	Brazos	.12		.15	. 20		.02	.00	. 03		T	. 22	T	****	****	****	****		****	****	****	. 10	06	1.00		****				.00	. 30	
afkin	Sabine Brazos Neches		.32	1.73	. 10	. 13				. 30		1.88		.30				28				32	1.02	.98						53		
uling []										. 00	. 00	a 13U	A. UN	+ 17.2				. UA3.														
cGregor	Brazos								. 68											т.												
cKinneyarathon	Trinity	. 02		. 28	. 03		. 05	.12	. 51							. 02						. 01	. 15	. 96								
arble Falls	Rio Grande. Colorado						L.		. 70	T.	. 21	T.	1.00	. 44	.05					T.			. 10	01								
arfa	Rio Grande.								95	1.		.00	.05	.00										. 31						.12		
arshall	Sabine			.34	. 19				.77			. 61						15			03	70	25	1 07			T			49		
atagorda	Coast				.06	1.93					. 03	.14	. 13	. 01				. 10			. 01	1.16	.18	1.01			48	****		15		
exia	Brazos		. 08		1.33	T.		.08	. 02	. 55		. 43	T.	.03								. 27	. 17	. 95			. 10			. 23	T.	
idland	Colorado Rio Grande.	.15				T.			. 60														. 10									
ission []	Rio Grande.			T.		T.	T.	T.	T.	. 25	T.	T.	T.	T.	,50	T.	FEE	T			PP.		. 15		. 05							
ont Belvieu	Nueces	01	. 97	1.59		2, 15						2,60	.48	.24			2.04				T.	2.34	. 96	1.11			1.86			. 23		
ount Blanco	Brazos	.01		. 00		.01	. 05	.00	.15	.25	. 33	.78										0.2	.07						.08			
cogdoches	Neches		T		1.48	T			.00	35	T	1 20	08					95				. 00		079				(10)			****	
ew Braunfels	Guadalupe			. 70	. 03					. (90)	41	69	91					, 200				1. 50	30	. 01				1.		32	. 30	
lestine	Trinity	.02		1.02	T.	T.			.51		.08	. 79	.02		1111		.02	T			45	25	55	66					т.	40		
anter	Brazos	. 12		.16					1.	. 10			. 0.5							1			- 1415	T.	T.			T.				
earsall	Nueces		.51	.04					. 08	T.	. 44		. 32									. 05	. 05									
ierce	Colorado	07										. 39	.12	. 34								. 21	. 83	. 54							.12	
lainviewort Lavaca	Brazos			. 19			T.																.06	.08								
ost		10	1.	.01				T	14	04		. 14	T.		1.						. 28	. 42	. 15				T.	.17	. 25			
utnam	do	.40		.00				4.	40	.01													20	.00	. 21							
avmondville	Coast	.28		.04	T.	. 25	.02	.30	.11	.09	T	.07	41	.15		02	02	01					. 30	13								
icardo																		.01					.00	. 10								
io Grande					. 10								- 90										30									
iverside [Trinity				1.60				T.	. 20	T.	1.05	:303	1 10				T.				. 80	. 50	1.45							. 50	
ockland		. 10	/FD	1.40	.00	40		10	. 117			I. URP					44.9				500	- 50								. 50		
ossville	Nueces	T	1.	. 42	- m	. 40	· m	.12	(III)	T.		. 00	. 50		T.						T.	*	*	. 70			. 10			.07		
unge											.08	1.00	1.43 1.08			. 03	.03	.01				T.	.11	. 08						.12		
binal				.12						.28	. 22		95										.04							. 10		
lado				.30			T.		.37		. 25	.05											73									
n Angelo									1.89														.18									
an Antonio		.05		. 60			.01		.07	. 05	.08	. 69	. 89				T.					.02	.10	.01						.19		
n Augustine		T.	. 28	1.22	. 42	. 56			. 25		. 05	1.60												1.75	. 02		.17			. 57		
an Juanito					.12	.09	.04		. 26	.05	.06	.19	.81	.03									. 21									
an Saba	Colorado	08		. 00	, 29				1 19		.17	. 63	.70									. 40	. 30									
nta Gertrudes .		.00							1.14		.02	. 10	1.					2 00				.12	.14									
aly		T.	.17	3.08	.16	.10						81	37					13			30	33	17	91			05			20		
ymour	do	. 45						T.				. 04				T.		. 10			.00	.00	.10	.30			- 00			. 20		
nyder []		0 443																					. 10	. 44			1					
merville				1.80					T.		. 20	.90	.37								. 19	. 85	.30	. 35						T.		
nora	Rio Grande	20							.84	. 02			. 06										.02	. 20								
amford	Brazos	111		.05			· · · · ·	.12	.10														.02	. 20								
amiord	do	. 23	****	9 14	99	****	T.		. 35	****	1 00							****			****	****	T.	. 55								
therland Springs.		. 10	****	1 90	, 33	****	****	****		****	1.25	.15	1.70			****	T.	. 05			.37	1.10										
sylor	Brazos	.01		1.43	.01	****			19	00	50	57	1.70		****		05					. 40	94		****			****	(D)	****		
emple	do																												T.	19		****
heodore	Pecos	.16					****	.00	. 82	.00		1.22	.00	. 10		****		****	****		***	.10	.10	. 00			****			.14		****
hurber	Brazos	. 13				1			- 38														1 111	55		1				1		
ivoli	Guadalupe		. 20		. 30						+ 10	. 14	. 18							. 15		. 35	. 25				. 24			. 05		
valde	TARGEGES							Inches:					1	1	1	1	1						1 1		1				1			
alentine	Rio Grande		· × · ·																		****		***									
alley Junction []	Rio Grande . Brazos	.10		****	1.70			.18	.15			2.15	.12	.15				. 20				.22		1.05						. 25		
aco	Brazos		24	. 02	.28				****	. 75		40									***	. 35	. 30	****								
axahachie [[Trinity	10	40		92	01	****	m	****	.72		. 40						****			****		. 13	. 53	·					****		
eatherford	Guadalupe Brazos Trinitydo. SabineColorado	.12	. 18		32	.01		10		59			****	****		****		****					.06	.70	T.					. 05		
ills Point	Sabine	. 66		. 36	.38	T	T	.05	.43	.02			****			T	T					m	25	1 90	.03				****	00	****	
inters	Colorado	1 00	1	1	1	1		- 00				1				A.	1 4 .					A .	(3()									

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

‡ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperature for December, 1912. District No. 8, Texas and Rio Grande Valley.

		Colo	rado.				ĺ				N	ew Me	xico.											Te	kas.			
Date.	Gari	nett.	San	Luis.	Agrica	iltural ege.	Carls	bad.	Star	ort iton.		ntain- ir.	Rose	dale.	Ross	well.	Santa	Fe.	Santa	Rosa,	Abil	ene.	Spri	ig ngs.	Brow		Cor	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4	37 41 43 42 25	13 1 5 0 9	39 39 42 40 27	17 18 9 11 10	62 60 59 60 49	34 37 40 25 25	70 68 69 63 59	33 34 33 31 32	57 54 53 56 58	24 20 25 23 17	55 56 52 50 42	18 20 18 17 6	50 40 45 48 38	30 25 25 25 20 15	62 50 61 67 48	35 30 31 23 30	40 40 42 39 28	23 27 26 21 14	57 49 56 58 43	36 23 31 22 24	68 58 60 69 55	44 35 45 42 37	67 57 64 64 60	34 34 44 36 37	78 76 79 80 77	61 60 67 59 56	74 68 77 70 67	66 66 66
6 7 8 9	25 18 39 30 27	-15 -21 -15 - 3 -10	17 23 24 36 32	-13 -20 -14 - 1 - 1	32 34 45 45 47	28 20 25 31 31	58 56 39 39 50	22 19 28 30 30	32 45 38 52 40	12 9 25 25 25 28	32 30 28 42 40	8 -14 6 22 13	26 38 30 32 44	10 - 1 18 22 12	34 30 43 37 53	10 0 29 35 30	21 30 33 36 37	5 8 13 24 18	32 40 40 42 51	$-{6\atop -6\atop 22\atop 31\atop 29}$	37 47 42 44 53	29 28 37 36 40	44 47 42 44 61	27 28 35 32 39	73 54 51 52 64	52 40 42 46 47	65 52 51 53 57	44 44 5
]]]	32 35 35 39 35	-12 -10 - 5 - 6 - 8	35 35 39 38 47	- 5 - 7 - 3 - 4	49 50 49 54 60	24 25 25 22 22 24	46 44 45 69 70	29 25 29 28 27	58 52 48 55 60	28 1 18 20 20	38 40 42 45 50	6 5 12 17 10	44 45 50 55 50	12 11 16 25 20	42 40 48 68 62	25 25 24 22 23	37 37 44 48 53	15 15 19 23 24	40 50 63 63 60	27 20 27 33 26	42 46 3 64 60	30 26 37 38 30	51 45 53 70 62	31 23 35 40 31	64 57 56 64 67	48 41 41 50 54	56 48 52 58 60	4 4 5 5 5
3 7 3 9	34 28 32 39 29	11 - 5 - 8 - 5	37 27 23 31 31	17 6 - 3 5 8	55 55 50 51 55	31 23 24 13 21	67 60 54 58 50	40 30 26 18 19	48 38 44 45 43	28 32 18 17 15	48 40 45 40 34	15 9 10 8 7	45 40 40 54 38	25 28 12 15 15	58 53 50 57 46	30 29 19 16 22	36 32 33 41 29	23 15 8 15 17	52 52 51 57 45	34 32 16 28 15	67 61 51 64 49	42 39 32 36 34	64 60 55 65 55	41 37 24 28 35	75 75 65 69 74	53 59 48 35 55	73 73 64 66 67	5 4 4 4 5
	24 26 30 32 33	-14 11 12 11 7	29 22 28 38 34	-10 - 5 - 5 - 5 - 9	52 33 42 46 52	18 25 8 10 15	46 39 45 52 66	12 27 14 12 16	38 28 45 51 54	1 12 11 10 9	34 36 32 40 45	0 13 - 4 7 8	34 30 40 45 46	12 15 10 12 20	43 32 29 38 39	15 20 - 1 - 2 7	33 24 30 36 36	10 11 8 10 13	38 31 44 54 54	9 21 6 24 21	44 37 40 53 57	27 30 28 25 35	40 36 36 52 57	36 27 23 20 28	69 56 53 55 66	54 48 44 39 38	62 50 51 52 59	5 4 4 3 4
3	26 31 28 35 37 39	-11 -16 -16 - 6 - 2 - 6	28 28 30 31 40 38	- 8 - 8 -10 3 8 2	44 43 47 51 56 57	22 14 18 14 13 16	52 51 51 56 68 60	27 16 20 29 18 28	55 58 48 42 51 57	11 8 5 17 26 20	34 42 40 38 52 50	11 3 3 18 22 24	38 40 38 42 50 49	11 12 10 20 20 20	40 46 45 52 65 55	17 11 12 20 21 25	29 39 39 33 43 39	10 11 13 13 17 22	45 55 59 54 59 58	20 20 21 26 35 25	45 54 53 52 66 57	28 25 34 32 30 36	50 53 55 53 66 67	28 19 29 38 26 34	72 64 65 70 63 76	58 43 34 46 50 34	64 51 57 60 56 67	4: 4: 4: 5: 4: 4:
	32.5	-6.3	32.7	0.0	49.8	22.6	55.5	25.3	48.5	17.3	41.7	10.3	42.1	16.7	48.2	20.4	36.0	15.8	50.1	22.9	53.0	33.7	54.7	31.6	66.4	48.7	60.6	48.

14													,	Texas														
Date.	Del	Rio.	Ell	Paso.	MeIn	ort itosh.		ort kton.	Wo	ort orth.	Galve	eston.	Hall vil		Hou	ston.	Luf	kin.	Pales	tine.	Plain	view.	Anto		Seyn	iour.	Tay	lor.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.																
1 2 3 4 5	76 66 60 68 76	52 47 49 43 46	61 62 55 60 51	42 42 44 40 40	83 74 69 70 78	55 59 57 50 52	68 63 67 67 61	47 37 42 39 49	74 58 53 59 60	50 37 41 49 37	75 68 68 68 72	63 53 58 60 61	75 72 65 71 74	61 54 52 60 56	78 67 61 72 75	60 55 55 61 61	71 70 58 68 68	50 48 41 55 55	68 60 52 61 70	57 44 43 51 47	58 51 62 62 53	42 19 34 26 30	β9 66 60 69 74	61 50 50 58 53	69 55 60 66 61	52 31 43 48 41	67 59 56 65 72	58 43 47 54 48
6 7 8 9 10	53 47 48 45 45	37 37 44 42 42	40 35 41 43 50	27 26 30 35 33	74 59 56 54 54	45 42 40 46 46	55 40 38 40 54	28 28 34 36 38	37 53 50 43 53	31 29 43 33 39	65 57 52 55 64	53 46 46 44 51	56 48 49 49 53	41 38 45 47 46	61 58 50 56 61	46 42 45 43 47	58 54 52 54	41 41 39 37 39	48 47 46 48 47	36 34 40 36 41	34 44 44 45 52	22 10 29 29 31	55 51 49 51 50	37 37 43 44 45	42 50 47 45 55	30 31 31 34 41	48 48 47 45 46	32 33 40 40 42
11 12 13 14	49 41 44 49 68	38 37 40 42 44	50 50 48 56 60	28 27 28 29 30	55 52 56 59 63	45 37 40 35 40	52 48 60 70 73	35 27 29 43 39	49 43 56 56 45	38 34 31 41 36	66 51 49 58 63	51 38 38 48 54	49 48 53 56 65	36 38 36 40 41	62 48 55 58 69	48 36 37 44 54	52 55 52 61 66	39 40 33 33 45	48 42 54 57 63	42 36 35 39 44	40 40 62 68 67	19 17 28 22 27	52 41 50 54 70	41 37 37 39 39	48 49 55 60 63	33 21 35 21 28	49 41 52 54 54	41 35 31 38 36
16 17 18 19	64 71 61 62 63	47 34 34 30 39	54 58 50 51 58	41 35 30 23 31	72 80 71 70 75	41 45 39 31 44	67 63 57 63 50	41 37 29 29 36	72 65 53 67 54	42 43 36 38 40	67 72 61 63 63	56 58 49 48 60	69 69 68 62 49	49 47 31 44 43	73 71 60 66 63	54 52 45 41 52	69 72 67 69 55	43 43 37 40 38	64 67 52 62 54	44 47 38 37 45	57 51 51 64 47	29 31 19 24 12	61 72 62 65 66	46 38 40 34 44	68 58 54 66 58	38 37 28 33 37	61 69 57 63 47	42 42 38 32 40
21 22 23 24 25	52 45 46 56 60	44 39 32 24 31	52 34 40 46 53	24 27 17 20 22	67 65 54 65 68	45 40 44 25 28	47 40 42 60 64	26 30 32 27 30	45 39 43 58 52	39 33 32 35 28	63 61 62 48 60	46 46 39 43 46	48 49 49 60 63	44 39 40 31 37	60 48 46 56 63	45 45 38 35 39	62 72 60 56 62	44 55 40 33 27	47 38 38 52 57	38 34 34 30 36	43 33 31 42 49	13 21 14 6 20	50 43 49 55 60	43 39 38 31 33	45 45 38 51 58	27 24 20 17 34	44 40 41 52 54	40 36 35 29 31
26 27 28 29 30	52 54 51 51 67 67	37 28 36 34 26 32	41 44 46 51 57 59	28 20 22 26 31 29	65 54 60 61 63 74	43 37 38 33 36 29	52 55 60 59 70 66	28 25 26 40 27 30	47 56 55 55 68 60	35 27 36 37 32 42	62 52 56 60 53 66	46 41 44 51 48 52	60 55 62 56 59 63	45 35 50 45 41 36	64 54 55 56 57 65	45 36 39 49 45 43	65 66 62 60 57 63	38 39 40 47 37 34	54 52 52 52 52 57 61	37 28 35 43 37 40	41 55 51 45 61 53	20 16 18 25 25 25 25	58 58 54 55 61 68	42 32 38 48 35 41	49 67 53 65 65 60	26 23 40 32 21 21	53 56 54 54 58 65	37 30 33 45 34 37
Mns	56.8	38.3	50.2	29.9	65.2	41.5	57.1	33.4	54.1	36.9	61.3	49.6	58.8	43.5	60.9	46.4	61.9	41.0	53.9	39.6	50.2	22.7	58.0	41.7	55.6	31.5	53.9	38.7

^{*,} b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

As in November, weather conditions were dominated for most of the month by high-pressure areas. While low-pressure areas were not entirely absent from the Southwest, more particularly off the coast of southern California, during the first decade, they failed to develop enough energy to enter the district or materially interrupt the prevailing fair weather. Of the northern lows, of which there were a number, few developed southern extensions in the form of loops; and, contrary to the usual sequence in such cases, when this did occur, only one, that of the 24th, developed a secondary depression. This low crossed the Continental Divide and joined a similar area in southeastern Colorado. The feature of the month was the prevailing low temperatures and light precipitation. As regards temperature, the month has been likened to December, 1909, but the cold was not so great, while the precipitation was only from one-third to one-sixth as great as three years ago. Killing frosts or freezing temperatures were general in the lowlands of southwestern Arizona after the 10th. The general absence of heavy snowfall at moderate elevations in the northern part of the district early in the season has permitted the freezing up of springs and water holes, and stock on the ranges has suffered on this account. Conditions somewhat similar prevailed in localities on the watershed of the Little Colorado in eastern Arizona.

TEMPERATURE.

The mean for the stations reporting was 29.5°, or 4.2° below the normal, making the tenth consecutive month with a deficiency of temperature. The mean for December, 1911, was 29.3°. The highest monthly mean was 54.1°, at Mohawk Summit, Ariz., and the lowest, 3.3°, at Fraser, Colo. In the northern and central parts of the district temperatures were continuously below the normal until near the end of the month, the deficiency being pronounced from the 5th to 8th and from the 20th to 24th. In Arizona, while a daily deficiency of temperature was general, it was not so great, and there were several days with a slight excess. There was no great uniformity in the dates of the highest temperatures, they having occurred on the 1st, 15th, 29th, and 30th, and a number of other dates. The lowest temperatures occurred for the most part in the last decade, with zero or lower readings in all the different areas, except southeastern Nevada. The highest temperature, 80°, occurred at Gilabend and Vail, Ariz., on the 1st, and the lowest, 34°, at Fraser, Colo., on the 26th and 27th.

Details of temperature are summarized in the following table:

				Temperature.		
Areas of States in Dis- trict No. 9.	Mean.	De- par- ture from nor- mal.	High- est.	Station.	Low- est.	Station.
Western Wyoming Western Colorado Eastern Utah	14. 2 15. 5 22. 7	$ \begin{array}{c c} -0.8 \\ -6.2 \\ -1.7 \end{array} $	58 55 66	Battle Mountain Mancos Emery	-27 -34 -32	Eden. Fraser. Strawberry Tun- nel (east).
Western New Mexico. Arizona Southeastern Nevada.	28.8 40.1 38.4	-5.0 -3.9	70 80 66	Deming 2 stations Caliente	$-16 \\ -7 \\ 3$	3 stations. Flagstaff No. 1. Caliente.

PRECIPITATION.

The average for the stations reporting was 0.66 inch, or 0.33 inch less than the normal. The average for December, 1911, was 0.68 inch. Precipitation was somewhat general in character during the first decade, and for the most part local during the rest of the month. In western Colorado and western Wyoming it occurred about the middle and last of the month, while in western New Mexico and the eastern part of Arizona practically all during the last two decades occurred on the 22d. The during the last two decades occurred on the 22d. greatest monthly amount was 3.67 inches, at Hachita, N. Mex., and none occurred at 1 station in Utah and 3 in Arizona. Monthly snowfalls of 10 inches or more occurred at 3 stations in western Wyoming, 23 in western Colorado, 2 in eastern Utah, 10 in western New Mexico, and 3 in Arizona. The greatest monthly snowfall, 37 inches, occurred at Horsefly, Colo. The average number of days with 0.01 inch or more precipitation was 5 in western Wyoming, 6 in western Colorado, 3 each in eastern Utah and western New Mexico, 2 in Arizona, and 1 in southeastern Nevada. For the district as a whole the average was 3 days.

The average precipitation and departures from the normal on the different watersheds are given in the following table:

Watershed.

Gr	reen.			San	Juan.	Cole	ittle orado.	G	ila.	Mim	bres.		prado per.
Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.
0. 61	-0.30	0.85	-0.52	0.55	-0.52	0.32	-0.50	0.87	-0.26	0.77	-0.05	0.21	-0.5

MISCELLANEOUS.

The average amount of sunshine reported, with departures from the normal, was as follows: Grand Junction, 60,-9; Durango, 80,+10; Phoenix, 88,+9; and Yuma, 87,+8 per cent.

The relative humidity reported was as follows: Grand Junction, 76; Durango, 67; Phoenix, 51; and Yuma, 44 per cent.

SNOWFALL IN THE MOUNTAINS.

Western Wyoming.—The snowfall on the upper watershed of the Green River during December was the lightest in years. In some places the first snow of the season did not fall until near the end of the month.

Western Colorado.—The season's snowfall up to the close of December was less than the normal. While it is true that the precipitation during October was greater than the average from the San Juan region northward, yet in the rest of the mountain region there was a general deficiency. In November and December the snow was uniformly light, the deficiencies being marked in the western counties. Comparing the depth on the ground at the end of the month, the average for the snow scales on the Gunnison watershed, average elevation (9,000 feet), 11 inches, is 7 inches less than a year ago. For the Grand (8,700 feet), 14 inches, and for the Yampa and

White (8,000 feet), 16 inches, the depths are 3 and 5 inches, respectively, less than at the corresponding date last year. For the San Juan (7,800 feet), the average depth was 6 inches, or 2 inches less than a year ago. In general, the snow contains a small percentage of moisture.

general, the snow contains a small percentage of moisture. Eastern Utah.—The snowfall during December was less than usual and the amount on the ground at the close of December was less than on the corresponding date last year. Considerable fell during November on the watershed of the Green and at the close of December was drifted and well packed.

Western New Mexico.—During October and December heavy rains and snows occurred in the southern part of the area, and the stored depth of snow was considerably greater than usual. A fair amount of moisture had accumulated in the soil, and the San Francisco, Gila, and Mimbres have a promising outlook for water. Precipitation on the San Juan watershed and adjacent region has been below the normal throughout the season, and at the close of the year but little snow remained.

Arizona.—Over the headwaters of the Verde and Salt, and on the upper Gila watershed, although the snowfall was much below the average, the continued cold prevented melting and the depth on the ground on December 31 was generally reported as close to the average. On the Little Colorado watershed the snowfall was exceedingly light, except on the Western Divide.

Table 1.—Climatological data for December, 1912. District No. 9, Colorado Valley.

			years	Tem	perature	e, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	of rainy	Number of clear days.	of pa	N u m b e r o f eloudy days.	Prevailing wind tion.	Observers.
Wyoming.																				
Battle Mountain Big Piney	Carbon	7,300		14.8		58	1	- 13	26	48	0.70		0.30	7.0	3				sw.	U. S. Forest Service. Ira Dodge.
Daniel	do	6,740	13		- 0.8		13	- 22	20	37		+ 0.11	0.45	12.0	4	7	20	4	nw.	J. M. Van Dervort.
EdenGreen River	Sweetwater	6,577 6,083	3 7	9.5 16.2			12	- 27 - 14	6 21	52 40	0.10		0.10	2.0	1 3	15 15	14	2	W.	Eden Valley L. & I. Co. Geo. H. Maxom.
Pinedale	Fremont	7, 167	6	14.8		380	12	- 19°	20	420	0.50		0.18	10.0	5		100	60	nw.	U. S. Forest Service.
Willow Creek Cabin	do	7,500	3	14.7		39 c	15	- 12°	23†	480	1.06		0.20	13.2	12	9,	76	136	nw.	Do.
Colorado.																				
Breckenridge	Summit	9,536	23	11.7	- 5.2	53	15	- 27	26	63	1.08	- 1.04	0.35	10.2	6	20	3	8	n.	Albert S. McCullough.
Cascade	San Juan	8,900	5								0.65		0.23	11.5	5	10				San Juan W. & P. Co.
Cedaredge Cochetopa	Delta Saguache		14	19.4	- 7.9	41	30	- 3	6	33	0.39	- 0.45	0.19	6.0	3	16	6	9		. Harry A. Cobbett. Bessie McDonough.
Collbran	Mesa	6,000	19	17.4	- 6.8	35	1	- 1	22†	29	0.94	- 0.20	0.43	16.0	7	19	6	6	SW.	A. A. Wood.
Columbine	Routt		2 2								1.16		0.26	19.0 14.0	7	15 22	11 3	5	SW.	Mrs. M. A. Caron. George W. Wade.
Corona	Grand		5	5.8		30	15	- 12	21†	34	1.04		0.01	14.0					W.	U. S. Weather Bureau.
Craig	Moffat		2 2	17 0					90	20	0.54		0.01	11.0	7	10	9	3		Joseph F. Haubrich. C. W. Roe.
Crawford (near) Crested Butte	Montrose		2	17.8			30	- 9 - 22	22 26	32 46	0.54 1.53		0.21	11.0 20.0	7	19	5	8		. Charles L. Ross.
Delta	Delta	4,865	22	20.4	- 4.8	50	3	- 5	22†	40	0.09	-0.57	0.04	1.8	3	18	6a	6a		. E. M. Getts. U. S. Weather Bureau.
Durango Eureka			17 5	23.3	- 5.0	45	8	2	7	37	0.44	- 0.96	0.23	5.8 9.0	6 5	15 17	14	2	nw.	San Juan W. & P. Co.
Fraser	Grand	8,560	3	3.3		38	15	- 34	26†		1.30		0.30	13.0	8	5	1	25	n.	L. D. C. Gaskill.
FruitaGlade Park		4,510 7,000	13	17.4	- 7.1	39	31	- 12	6	37	0.56	- 0.16	0.28	6.5	3	16	10 8	5	SW.	J. B. Willsea. A. F. Terrill.
Gladstone	San Juan	10,400	5								2.11		0.60	27.2	7	15	10	6	ne.	San Juan W. & P. Co.
Glenwood Springs (near)	Garfield	5,823 4,602	14 21	15.6 21.4	- 9.5	41	12 30	- 14		45 29	0.56	-0.75 -0.27	0.15	8.0	5	27 15	8	8	n. nw.	E. A. O'Neil. U. S. Weather Bureau.
Grand Junction Grandlake	Grand	8, 153	4	21.4	- 6.8	40	30		20	20	0.17	0.21	0.40	15.0	4	21	6	4		Mrs. Belle Kauffman.
Grand Valley	Garfield	5,089	20	20.5						43a	0.49	- 0.42	0.21	3.2	5	12				David Evans.
Gunnison Hesperus (near)	Gunnison La Plata	7,670 7,610	19		- 6.7		10	- 27		49	0.43	- 0.21	0.15	6.5	6 5	21	9	8	w.	Clarence Adams. G. F. Snyder.
Horsefly	Montrose	8,700	2								1.75		0.41	37.4	7	18	9	4	ne.	Lawrence J. Finch.
IrontonLake City	Ouray Hinsdale	10,000	2 7	10.0			30	- 21	21	40	1.51		0.39	17.2 9.4	6	17 19	3 5	11 7	sw.	Mrs. Amanda E. Foley. J. F. Maurer.
Lay	Moffat	6, 190	18	14.2	- 4.8	48	11	- 23	26	48	0.25	-0.65	0.10	5.2	6	15	2	14		. A. G. Wallihan.
Mancos Marble	Montezuma Gunnison	6,960 7,951	13	21.6 15.1	- 5.0	55 46		- 5 - 20	26 6	49 48	0.40	- 0.88	0.14	5.5	5	18 21	10	6	nw. ne.	B. M. Krumpanitzky. F. E. Morse.
Marshall Pass	Saguache	10,846	9			30				40	1.51		0.31	15.0	7	14	3			. Wm. L. Williams.
Meeker (near) Montrose	Rio Blanca		20 23	13.0		40 45		- 23 - 2	22 6†	48 37		-0.51 -0.52	0.34	11.5	5	16	10 3	5	SW.	T. Baker. U. S. Reclamation Service.
Nast	Montrose		2	14.2		44			21	48			0.40	19.0	7	19	4	8	w.	Arthur Hanthorn.
Pagosa Springs	Archuleta	7, 108	5	13.0		42		- 20	7	56	0.79		0.40	8.5	6	18	8	5		
Palisades	Mesa Delta		17	22.4	- 7.0	41 42			24†	36 35	0.43	- 0.48	0.28	3.0	2 5	15	10	7	sw.	E. P. Updegraff. J. M. Underwood.
Pitkin	Gunnison	9,500	3								0.99		0.60	11.5	4	23	3	5		. Mrs. Maggie Cammann.
Pyramid Rangely			13		******								*****	*****				****		Y YY 34 - C-1
Redcliff	Eagle	8,695	19									+ 0.10		26.2	6	16	5	10		. Dorothea Greiner.
Redvale			10	19.2		43	301	- 9	22	37	0.60	- 1.78	0.29	6.5 5.0		20 22	6	5 9	8.	Or. E. S. C. Foster. Clinton B. Smith.
Rifle	Garfield			18.4		39	11		6	37	0.51	1.10		4.7	4	18	2	11		Herman Eiche.
River Portal Sapinero (near)	Montrose		6 9	19.0		43a		- 9a - 16		38a 30	0.52			8.5 16.9		18 22		80		W. F. Irving.
Shoshone	Garfield	6,110	2	10.2			30				1.24		0.00	10. 3						Central Colorado Power Co
Silverton (near)	San Juan	9,400	5	14.2		45	12	- 19	21	50				7.5		18	5	8	ne.	San Juan W. & P. Co.
Steamboat Springs	Routt	9,600	9	12.4		42	13	- 29	26	52	1.70		0.20	33.0 35.8		13	10	10	nw.	H. J. Wills. Herbert B. Gee.
Tacoma	La Plata	7,300 8,756	5	17 0		40		12	21	42	0.39		0.13	8.9 14.5		19 20	3 4	9 7		. San Juan W. & P. Co. David S. Painter.
Telluride Terminal Dam	San Miguel La Plata		5	17.6			9	- 13	21	43	1.06		0.50	10.0		21	1	9	e. s.	San Juan W. & P. Co.
Yampa (near)	Routt	8,000	3								0.74		0.22	7.8	7	12	15	4	n.	Percy A. Hughes.
Utah.			1																	
Aneth	San Juan	4,800	8	26.8		48	2	3	29	36	0.10		0.10	0		21	5	5		. H. R. Antes.
Bluff	Wasatch	4,200		****			***				0.45		$0.27 \\ 0.20$	4.8	7	18	00		se.	Mrs. H. P. Raplee. Oscar Wilkins.
Boneta	Washington	6,750					1				0.47		0.20	4.0		10	. 0		Sc.	J. M. Lauritzen.
Castle Dale	Emery	5,500	13	19.4	1	46	15	9	23†	46	0.50	- 0.10	0.40		. 2	19	12	0		. Miss Fay Jeffs.
Cisco Dragon	Grand Uinta	4,447 6,000	13	18.5		39	30	- 7	22	31	0.46		0.23	4.2	4	20	2	9	n.	J. J. Anderson. H. D. Ford.
Duchesne	Wasatch	5,500	2	17.1		38	30	- 8	23†	35	0.08		0.05	0.8	2	17	11	3		. M. M. Smith.
Elkhorn	Uinta Emery	6,657 6,200	11	31.5	+ 4.5	66	3	+ 3	24	55	0.22	- 0.31	0.20	2.2	3	12	0	19	е.	Chas. De Moisy, jr. H. C. Wickman.
Escalante	Garfield	5,700	9	24.8	- 0.5	54	31	0	22	46	0.18		0.10		. 3	20	0	11		H. C. Wickman. Geo. H. Barney.
Fort Duchesne		5,700 7,625	24	17.1	- 0.5	41	30	- 12	26	40	0.02	- 0.55	0.02	1.0	1	23	7	1	W.	G. W. Dickson. J. Peter Naab.
Grayson	San Juan	6,000	5	23.8		49	1	5	5	37	0.50		0.40	5.0	2	19		12		E F Thompson.
Green River Hanksville	Emery Wayne		12	23.4	- 0.4	55	1 12	- 3 - 5	29 22 29	39 46	0.30	+ 0.07	0.16	2.2		14		5 2		F. J. Weber.
Hite	Garfield	3,500	12	33.2	- 2.4	55	30		29	26	0.48			5.0		13	9	9		John P. Hite. Amos Workman.
Hurricane Kanab	Washington	3,800	5	30.6		60	1	10		38										
La Sal	San Juan	7,000	9	19.2		49	24	- 4	25	40	0.20		0.22	1.0 5.6	4			6		Gertrude W. Carpenter.
Leeds (near)	Washington	3,400									T.		1993	T.	0			9		B. F. Anderson.
Loa Manila		7,000 6,225	19	19.8		46	14	- 15	22	45	0.15		0.15	1.5	1	10	11	10		Daniel M. Nelson.
Moab	Grand	4,000	22	26.5	- 4.0	49	1	- 5	281		0.35			2.0		15		15		Henry Crouse.
Monticello New Harmony		7,545 5,200	3				***				*****			****				* * *		
Orderville	Kane	6,660	2								0.14				. 4					F. A. Porter.
Pine Valley	Washington	6,000	1								0.25		0.10	2.5	3	6	18	7	n.	Mason Gardner. R. H. Thompson.

Table 1.—Climatological data for December, 1912. District No. 9—Continued.

			year	Temp	erature	e. in c	legre	es Fah	renh	eit.	Prec	ipitation	, in ine	ches.	days,		Sky.		diree	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	oloudy days.	Prevailing wind tion.	Observers.
Utah-Continued.																				
anch	Kane	6,700 4,250	10	24.4		52	3†	- 4	16	48	0.44		0.33		3	22	2	7	n.	J. W. Seaman. W. C. Foy.
an Rafaelt. George	Washington	2,880 7,625	25	35.7	- 2.2	58	2†	10	27†	39	0.09	- 0.84	0.05		2	14	11	6		A. B. Ballantyne.
ofieldoringdale	Carbon	7,625 3,500	4	13.1		47	14	- 27	22	52	1.56		0.50	22.0	8	24	0	7	8.	B. Newren. Hattie Wood.
r'berry Tunnel—East.	Utah	7,500	4	11.3b			31	- 32	21	52	2.55		0.60	28.0	9	18b		76		U. S. Reclamation Service
easdale	WayneGrand	7,000 5,150	1	20.2		47	31 30	- 3 1	6 21	32 26	0.20 0.31		0.20	2.0 4.5	1 2	17	8	9 7	w. nw.	Henry Cullum. A. M. Starmont.
opic	Garfield	7,000	15	24.0≈	- 4.8	50	3	- 9	21 23	47	0.10	- 0.56	0.10	1.0	1	16=		48		E. P. Bolton.
routcreek Ranger	Uintado	9,200 5,050	1 15	16.6	- 1.1	41	30	- 5	22†	43	0.09	- 0.47	0.09	1.0	1	25	6	0		Forest Supervisor. S. P. Trim.
ictor	Emery	5,250														20				F. F. Noyes.
hite Rocksoodside	Uinta Emery	6, 200 4, 645	1	23.0m		43m	8	2m	16	37m	T. 0.04		T. 0.04	T.	0	8m	9 2m	8m	n.	C. F. Keil. D. P. Adams.
		.,010																		
New Mexico.	Concern	5 500	15	24.9	20	50		9	90	47	0.00	1 0 02	0.20	10.5		14	12	4	sw.	Max A. Balke.
lmaragon	Socorrodo	5,500	15		- 2.9	59 56	14	- 3	28 23	47 55	0.51	+ 0.02	0.30 0.36	10.5 9.0	3	14 22	13	5	SW.	John R. Milligan.
ztec	San Juan	5,590	12							58	0.25	- 0.22	0.15	4.5 7.5	3	12 20	19	6	SW. W.	Dr. T. J. West. Herman Berger.
ergers Ranch	do	8,000 6,500	3	25, 2 22, 0		54	27	- 10 - 3	5 27	30	0.23		0.15	0.4	2	23	5 2	6	e.	Patrick Des Georges.
oomfield	San Juan	5,500	17		- 5.1	50	15	- 16	23	49	0.33	- 0.27 - 0.19	$0.26 \\ 0.15$	4.0 3.5	4	18 21	11	7	sw. ne.	Fred Le Clerc. Agent Southern Pacific R
ambray	Luna	4,215	13 12	30.8	- 9.2	63	31	- 3	28	60	2.05	+0.19	2.00	15.0	2	24	3 5	2	ne.	W. C. Belden.
olumbus	Luna	4,054	35	37.6		70		10		42	0.65	- 0.22	0.24	4.0	4 2		0	13	SW. W.	Agent E. P. & S. W. R. I Agent Southern Pacific 3
emingulce	Rio Arriba	4,333 6,756	15		- 4.4	44	1	- 12	8†	49					2	26	5	0	W.	Wm. R. Beyer.
ulce	Grant	6, 152	37 18	35.0	-4.1 -4.2	58 48	19	11	23 23	37 39	$0.73 \\ 0.12$	- 0.10 - 0.25	0.36	11.0	4		8	5 2	W. W.	U. S. General Hospital. Cyril J. Collyer.
ruitland	San Juan Luna	4,800 4,486	12	38.4		69	31	- 4	26	57	0.12	+ 0.30	0.50	8.0	2 5	27	0	4	ne.	Agent Southern Pacific R
la Planting Station	Grant	6,475	1	34.6		58	14†	12	23 27	38 50	0.40		0.20	7.0	5 2	22 17	4	5	w. w.	U. S. Forest Service.
O. S. Ranch	do	8,000 4,504	3	20.8			31	- 2 - 1	24	30	0.84 3.67		0 00	14.0	3	18	8 7	6	w.	Victor Culberson. Agent E. P. & S. W. R.
aynes	Rio Arriba	6,600	1	22.2			11		23	68	0.19		0.07	2.2 4.0	5 2		1	8 5	sw.	Dr. John R. Haynes.
ermanes		4, 451 4, 245	3 29	37.8	- 4.8	66	16	3	24	49	0.46 2.64			13.0	3	19	1 7	5	e.	Agent E. P. & S. W. R. J. H. McClure.
una	Socorro	7.300	7	21.6		49			23	52	1.25	-0.18	0.60	12.5	4		12	0	W.	C. B. Martin. Charles Dennis.
imbres inos Altos (near)	drantdo	5,007 7,253	7					2	23		0.37 1.55			5.0 25.0	6	19	5 8	4	nw.	O. L. Scott.
ratt	do	4.415	3								0.93			10.0	3	18	6	7	W.	Agent E. P. & S. W. R. I
utnamedrock	Grant.	6, 200 4, 150	7								0.98		0.70	9.5	4	17	6	8		C. F. Spader. Robt. H. Woods. Agent E. P. & S. W. R. I
odeo	do	4,118 5,860	3	32.8		56	19	5	23	39	1.04 2.35			11.0	4 2 7	19 23	11 3	1 5	n.	Agent E. P. & S. W. R. I E. M. Brumback.
ilver City	do	0,000	1	04.0		. 00	13		20	00	2.00		1.00	15.0	1	20				Is. M. Dittiliback.
Arizona.	Cochise	4, 184	16								0.30	- 0.48	0.21	2.8	3	23	3	5		Thos. Allaire.
lpine	Apache	8,500	2																	U. S. Forest Service.
shforkztec		5, 229 492	1 14	50.4	- 3.9	75	1	25	28	40	0.20 2.00	+ 1.55	0.15	2.0	1	23	0	6		Do. Agent Southern Pacific F
enson	Cochise	3,523	30	42.1	- 3.9 - 7.0 - 3.9	72	15	14	23	48	0.00	-0.52	0.00	0	0	18	4	9	ne.	Do.
isbee	Greenlee	5,500 6,000	21	41.4	- 3.9	64	2	18	6	32	0.52	- 0.55	0.28	6.0	2 4	26 13	18	5	8.	Prof. L. N. Goodding. Mrs. M. A. Jones.
lueonita	Graham	4,916	38								0.40	-0.78	0.35	T.	2	14	8	9		A. H. Jelley.
owieuckeye		3,756 980	35 19	42.2	- 4.4 - 4.0	66	1	11 22	28	36	0.16		0.06	1.6		15 28	10 2	6	ne.	Agent Southern Pacific I H. E. Kell.
anille	Santa Cruz	5,225	2		1															Robt. A. Rodgers.
asa Grande	Pinal	1,396 1,422	33	46.2		72	14	21	26	46	0.70		0.50	0			0	2 4	е.	. Agent Southern Pacific I Frank Pinkley.
handler	Maricopa	1,217	17				1	20	29		0.76	- 0.15	0.57	0	2	25	1	5	ne.	F. V. N. Dana.
nin Lee	Apache	6,090 8,000	4	23.7		54	30	- 2 15	231	45 24	0.12		0.07	2.5			8	12	n.	Rev. L. Ostermenn, O. F. H. R. Chlarson.
hlarsons Milllifton	Greenlee	3,584	21	41.4	1	69	1	20	30	29	0.35	- 0.75	0.20	2.5	3	23	7	1		. Arizona & N Mex. Ry. (
lineochise	Gila Cochise	2,300 4,219	13 12	42.2 37.6	- 3.8 - 7.1 - 3.8	64	3 15	19 10	28 25	37 50	1.49	- 0.13 - 0.16	1.01	5.5			7	7	SW.	W. M. Clanton. Agent Southern Pacific
olumbia	Yavapai	1,900	14	47.6		65	1			28	1.30	- 0.30	0.90	0	3	26	2	3	e.	M. J. Nolan.
ourtlandos Cabezos	Cochise	4,543 5,250	3	35.4		60	19	12	24	42	0.54		0.28	T.	3	19 26		3	nw.	Agent E. P. & S. W. R. Neil Erickson.
ouglas	do	3,930	10	40.6	- 4.6		5	9	24	48	0.96	+ 0.11	0.49	2.0	4	24	6	1		. Dr. F. T. Wright.
udleyvillelgin	Pinal Santa Cruz	2,204	21	44.3 39.6	- 2.9			20 16		42		- 0.29	0.42 T.	0.5 T.	5			2 4		Geo. F. Cook. George Beebe.
airbank	Cochise	3,862	2																	. Agent E. P. & S. W. R.
agstaffagstaff (1)	Coconinodo	6,907 7,500	22	(30) A		800		- 7		39 50			0.21	6.2		20 22		7 4	e. ne.	U. S. Weather Bureau. U. S. Forest Service.
orence	Pinal	1,504	13	48. 1	- 3.4 - 0.4 - 3.9 - 9.8 - 4.5 - 2.9	75	1	26	25	44	0.80		. 0.80	0	1	21	0	10	W.	Agent Ariz. Eastern R.
ort Apacheort Huachuca	Navajo Cochise	5,200 5,100	42 27	37.1	- 0.4	76 65		21	5	64	0.09	- 1.37 - 0.30					0		ne. se.	Post Surgeon U. S. Arm Do.
ort Mohave	Mohave	604	40	44.2	- 9.8	68	3	23	20	37	T.	- 0.90	T.	0	0				n.	August F. Duclos.
labendlobe	Maricopa	737 3,625	10	48.7	- 4.5	80 61	1		23							26 13		5 2		B. G. Fox, M. D.
rand Canyon rand Canyon (1)	Coconino	6,866	9	22.7		. 51		0	26				. 0.70							. Agent Grand Canyon R
rand Canyon (1) ranite Reef Dam	Maricopa	3,676 1,372			+ 2.0		14	29	20	34	0.57	+ 0.08	0.40	0	2	23	6	2	8.	B. W. Zachau. U. S. Reclamation Servi
reer	Apache	9,200	7		7 2.0															U. S. Forest Service.
erefordolbrook	Cochise	4,180 5,069			- 8.5	55	30	· · · · i	26	42	0.40		0.25			17		11 9		Agent E. P. & S. W. R. Thorwald Larson.
ndian Oasis	Pima	3,000	2																	. Joseph Menager.
ntake	Gila	2,230 4,743	6				18	21	22	27	1.88	+ 1.54	0.90	12.2		26		3 5		U. S. Reclamation Servi
eams Canyon	Navajo	6,600	6	25.7		. 50	31	3	23	40	0.25		. 0.20	2.5	2	22	5	4	W.	Fred A. Bartram.
Kingmanakeside	Mohave	3,326 6,500		42.4	- 1.7	08				37	0.30	- 0.53 - 1.03			3	25				Agent A. T. & S. F. Ry Prof. J. Peterson.
ewis Springs	Cochise	4,029	2								. 0.20	- 1.00	. 0.20	T.	1 6	16				Agent E. P. & S. W. R. Vesto M. Slipher.
owell Observatory	Coconino	7,180											. 0.22	5.2	3					

 ${\bf TABLE} \ 1. - Climatological \ data \ for \ December, \ 1912. \quad District \ No. \ 9-- Continued.$

			years	Tem	perature	, in	degre	es Fal	arenh	neit.	Pre	cipitation	n, in in	ches.	days,		Sky		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy da 0.01 inch or more	Number of clear	Number of part- ly cloudy days.	Number of cloudy days.	g wind	Observers.
Arizona - Continued.																				
Moccasin. Mochawk Summit. Naco. Natural Bridge Oracle. Osborn. Paradise Parker Payson. Phoenix (1) Phoenix (2) Pinal Ranch Pinto. Prescott. Prescott Dry Farm. Quartzsite. Redrock. Rice. Roosevelt. Sacaton. St. Johns. St. Johns. St. Michaels.	Mohave Yuma Cochise Gila Pinal Cochise do Yuma Gils Maricopa do Pinal Apache Yavapai do Yuma Pinal Apache Yavapai do Pinal Apache Pinal Apache O Pinal Apache	4,500 538 4,579 4,990 4,676 5,436 5,436 1,108 1,092 4,520 5,320 800 1,864 2,665 5,120 800 1,864 2,665 5,650 6,950 6	1 11 2 23 18 2 6 6 17 4 18 22 4 18 22 4 15 5 5 30 8 8 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	32.1 30.6 46.0	- 6.5	63 74 70 70 70 71 56 77 71	15† 15 1† 15 1† 11 1 1 1 1 1 1 1 1 1 1 1	7 18 10 29 23 26 7 6 18 17 28 20 -3 2	25† 6 23† 29 25 23† 23† 23† 23† 23† 23† 27† 27† 23	29 46 48 50 34 42 39	0.44 0.65 0.85 1.33 0.30 0.40 0.97 0.83 0.75 0.79 1.72 T. 1.23 0.77 0.35	- 0.09 - 1.10 + 0.13 - 0.04 + 0.24 + 0.01 - 0.52 - 0.32 - 0.38	0. 43 0. 38 0. 50 0. 70 0. 30 0. 68 0. 30 0. 60 0. 65 0. 72 0. 83 T. 0. 83 T. 0. 45 0. 25	0 0.5 3.0 1.5 3.0 13.0 7.0 0 0 0.0 9.0 0.1 1.2.0 T. 0 2.5 1.0	2 2 3 4 1 1 3 2 2 2 2 3 3 0 3 4 4 2 4 1 2 2 2 1	24 26 18 21 24 14 26 18 22 24 22 24 27 23 20 14	1 0 11 5 3 14 1 7 6 5 5 5 0 2 0 6 15	6 5 2 5 4 3 4 4 6 6 3 2 2 4 2 5 5 4 2 2 5 5 5 5 5 5 5 5 5 5 5	W. W. SW. e. SW. n. W. SW. SW. SW. SW. SW. SW. SW. SW. SW.	R. A. Ward. Agent Southern Pacific Ry Agent E. P. & S. W. R. R D. G. Goodfellow. J. W. Lawson. Agent E. P. & S. W. R. R J. C. Hancock. M. A. Israel, M. D. Mart McDonald. U. S. Weather Bureau. George Acuff. Salt River Nurseries. Irion & Craig. Mrs. C. F. Henning. J. W. Flinn, M. D. L. L. Bates. W. E. Scott. A. B. Lee. Arthur Pritchard. U. S. Reclamation Service. E. W. Hudson. Alex. Shreeve. Rev. A. Weber, O. F. M.
SalomeSan Simon	Yuma Cochise	1,875 3,609	6 26	44.2		73	1	20	20†	40	0.00		0.00	0	0					Mrs. M. B. Swartz. Agent Southern Pacific Ry
SeligmanSentinelSilverbellSilverbellSilverbellSilverbell.	Yavapai Maricopa Pima Navajo	5, 219 685 2, 650 5, 644	6 14 7 5	35.2 48.2 29.9		68 78 64	1 2	9 32 4	7 22† 7	42 28 58	T. 1.10 0.37		T. 1.10 0.27	0 6.0	1 2	27 30 20	0 0 4	1 7	n. n. n.	Librarian A. T. & S. F. Ry Agent Southern Pacific Ry Imperial Copper Co. William J. Flake.
Springer ville	Apache Conconino Maricopa Graham Cochise Mohave Coconino Pima do do Yavapai Maricopa Cochise Cochise Cochise Yavayai Maricopa Cochise Coconino Navajo Yuma	6, 862 3, 200 1, 165 2, 800 4, 550 3, 997 4, 550 2, 380 2, 526 3, 421 2, 072 4, 164 6, 750 4, 853 141 150	2 4 8 10 14 3 14 32 4 3 14 19 15 32 10 4 32 5	38.8 51.8 42.4 42.8 24.5 45.8 43.0 45.6	- 1.2 - 1.7 - 7.4 - 5.7 - 4.3 + 0.6	60 68 72 67 59 52 72 72 72 72 80 70 70	1 1† 15 18† 1 14 14 14 14 1 1 15†	24 23 14 22 4 18 10 18 20 10 3	7† 29 30 27 28 6 26	30 41 49 37 30 47	0.35 0.94 0.36 0.53 0.32 0.39 0.34 0.22 0.15 0.40 0.13 0.28	- 0.44 - 0.23 + 0.18 - 0.52 - 0.41 - 1.23 - 1.59 - 0.58 - 1.19	0.35 0.85 0.13 0.41 0.32 0.34 0.37 0.21 0.15 0.30 0.00 0.13 0.11	0 0 0 2.0 T. 5.0 0 0 0 0 0 T. 7.0	1 3 3 2 1 4 2 1 2 1 2 0 1 3	22 25 13 22 22 15 18 27 23 0 26 16 23 28 25	2 4 7 7 5 7 8 3 3 5 31 0 1 6	7 2 11 2 4 9 5 1 3 0	se. se. e. ne. n. nw. nw. w.	U. S. Forest Service. Laura B. Symons. F. H. Simomns. J. H. Larson. F. N. Wolcott. Truxton Canyon Ind. School Ira E. Bell. University of Arizona. James F. Record. U. S. Coast & Geodetic Surv Agent Southern Pacific Ry J. O. Carter. Agent S. F., P. & P. Ry. Agent Southern Pacific Ry E. J. Nordyke. Winslow High School. U. S. Weather Bureau. C. J. Wood.
Nevada. CalienteLas VegasLogan	Clark	4,407 2,033 1,355	2 3 5	31.8 42.0 41.4		66 65 65	2 3 3	3 17 12	22† 12† 28	51 43 41	0.15 T. T.		0.10 T. T.	1.5	2 0 0	29 25 29	2 3 2	0 3 0	ne. s. n.	Salt Lake Route. C. P. Squires. O. W. Jarvis.

*, b, e, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 9, Colorado Valley.

Stations.	Watershed.			1	1	1	1	1				1	1	1	1	25 0	f mo						1			,				*			. T
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Wyoming.																																	
attle Mountain	Snake	.20															.30														. 20		0.
ig Pineyaniel	Green		·		T.																												
den	do				.10								****		T.		. 15			T.									T.		. 15	. 15	0.9
reen River	do	. 03			T.	T.														.03										T.	T.	T.	0.
Villow Creek Cabin.	do		. 02		.00						T.				T.	.02	.06	. 10	.11	.03	.02	****			.03				.14	.02	. 18	. 16	
Colorado.																												1					
reckenridge	Grand				T.	. 35		T.	T.	T.							T.	. 10	T.	T.						. 10	T.				. 18	. 05	1.1
ascadeedaredge	San Juan Gunnison,		.07		. 03	. 02												.20								T.				10000	T.	****	0.
ochetopa	do				. 43																						****						0.3
ollbranolumbine	Grand Yampa	. 11	. 05	T.	. 43	.03			****		T.						. 15	.10						****		. 07		.12		10	15	.26	0.
olumbine Ranch	Gunnison	.48	.15			.51							****				.18									T.				. 10	. 10	T.	
orona	Grand Yampa		****																									****					
rawford (near)	Gunnison	. 10	. 02		1 .11													. 05			.21								****			****	0.
rested Butte	do		.24									10000		1			. 29	. 10			****			****		T.	****				. 10	. 15	1.
urango	San Juan		T.		. 06				. 12	. 04						. 02																	0.
ureka raser	Grand	. 05		T.	.30				. 05		1000						. 17			.30			****	****		T.						. 10	0.
ruitalade Park	do	. 20	. 02		. 28									T.	T.		.06	T.														****	0.
ladstone	San Juan	. 60	. 14	. 13	3								****				.60	17						****		T		****	****	****	. 17	.30	0.
lenwood Springs	Grand	. 05	. 15	.00	. 15				****								. 15																0.
(near). rand Junction	do		T.	T.										T.			T.									T.							0.
randlakerand Valley	do		.01		. 20												T.									. 40						. 10	0.
unnison	Gunnison	. 14			1 0	. 15											.03									T.					T.	. 03	0.
esperus (near)	La Plata	. 04				. 05				. 02							. 03																0.
lorsefly	Gunnison		. 41 T.	T.	. 30 T.	.39				T.							. 20									т.	. 08		****	****	T.	.08	1.
ake City	do	. 21		.01	. 02	. 10								0.00			. 11	. 15		2												T.	0.
ay	Yampa San Juan																. 02					T.				. 05	Sec.			. 02	. 05	****	0.
arble	Grand	. 42	. 03		. 22												. 13														T.		0.
farshall Pass	Gunnison White	.31	T.		-	.34	****		. 11							. 21	. 21	T.	T.	.20											. 19	. 28	1.
Iontrose	Gunnison	. 14			. 02	. 02											.06	. 03		****		****		****									0.
ast agosa Springs	Grand San Juan	. 40	T.													****	.08			. 12			03								.22	. 40	1.
alisades	Grand	. 15	T.		28												T.								****						****	****	0.
aonia itkin	Gunnison	.05			. 22	. 12			****	****						****	.07									T.					****	60	0.
yramid	Yampa																														****	.00	
langely	White Grand	.29	.01	T.	T.											59						·m·		****					m.	50	90	.40	1.
tedvale	San Miguel	. 29															. 18									T,						. 40	0.
Rico	Dolores		.02	Т.									****				.01	T.								T?							0.
River Portal	Gunnison	. 16			09	. 14										****	. 11	. 02				****							1000		1000	T.	0.
apinero (near) hoshone	Grand	.35			1	. 18		10000					***				.30	. 16								.08					****	. 03	1.
ilverton (near)	San Juan	. 20			T.	T.				. 01							.27		.01												****	T.	0.
pruce Lodgeteamboat Springs.	Grand Yampa	. 18	T.	. 13	. 18	. 16			.01		. 17						. 15	.10		. 15					*				****	T.	. 17	T.	1.
'acoma	San Juan	. 13	T.		. 02	. 09											. 03	. 05													****	. 30	0.
'elluride 'erminal Dam	San Miguel San Juan	. 50				. 04				. 03		T.					. 21									T.				****		T.	0.
ampa (near)	Yampa	. 16			. 22						T.					****	.06			. 11						. 11				. 02	.06		0.
New Mexico.																																	
lma	Gilado			.08		08	. 20		. 30																								0.
ztec	San Juan	T.		T.	T.	. 15			T.								.03					****	.07	****		****				****	****		0.
ergers Ranch	L. Colorado.		T.	T.		. 15	.06	.02	T.							.05							T.										0.
loomfield	San Juan				.02	. 05	1	Т.		T.				deres.		500		****			****	.06											0.
ambrayliff	Mimbres						1.07														****		.09										0.
olumbus	do		.20			T.	2.00	.40	.24	.09							2000										feer.			dece.	10000		2.
eming	Mimbres San Juan						*	. 40						Sec.																deres			0.
ort Bayard	Mimbres	T.	T.			T.	.36	T.	7.11	.01								****			****		.25			***	fara.			· fanor			0.
ruitland	San Juan	. 02			Т.																	*	. 07							. aces			0.
age ila Planting Sta'n.	Mimbres		T.			.08	. 20	T.	.30	.01							0000						. 05			***	· leve				****		0.
O. S. Ranch	Gila							.04 T.															T.										. 0.
aynes	San Juan		.07		. O5		2.89	Т.	T.	T.	T.		Same.				.03									0						****	3.
ermanes	Gila				3		. 18																										0.
ordsburg una	do			.10	5	.05	1.36	. 18	.50					dece.						10000												****	2
imbres	Mimbres						.37																										. 0.
inos Altos (near)	Gilado	.03	*		0	*	1.08		.21 T														. 06										0
utnam	San Juan																					1											
edrock	Gilado					*	.70	т.	. 13														. 15										0.
ilver City	Mimbres					.14	1.05	.03	.25	.58																			****				2
Utah.									-																								1
neth		. 10			Т.																												0.
luff	Green				.05	.27					. 18														1	1	1	-		1	1		. 0.

Table 2.—Daily precipitation for December, 1912. District No. 9—Continued.

Stations.	Watershed.														3	Day (of mo	nth.															-
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Utah-Continued.																																	
	Colorado																40																0.
	Green																												****				
	Grand				. 23												. 05									. 10							0.
uchesne	do																					T.											0.
	Colorado															.01	. 20			T.													0.
	do										. 10					. 05																	0.
ort Duchesne	Green																									. 02							0.
	San Juan	10																:															0.
	Green			. 16	. 14													T.															0.
	Colorado		15							19					T.		Т.																0.
	do		. 15							. 40																							
Canab	do	.07															.08	17								·T.							0.
a Sal	Grand Colorado		.04		. 13 T	Τ.				T.							1.	- 14															7
	do																																0.
fanila	Green																	T.				Т.											0
IoabIonticello	Granddo	.22	. 04		.00																												
New Harmony	Colorado																																0.
Orderville	do		. 04						Т.							.06 T.	.01					. 10	T.			T						10000	0
Pine Valley	Green				. 10					1.							1										· · · · ·						
	Colorado		33						T.							. 05	. 06													1000			. 0.
an Rafael	Green								04																								0.
St. George	Green	16	.05		. 10				.04							. 20	. 50	.37								. 09)				. 05	. 06	6 1.
Springdale	Colorado																				***									1 0	. 10	80	0 9
Strawberry Tunnel,	Green				25							****					. 40	. 50	. 10												. 10	.00	1
east. Teasdale	Colorado				T.				20							T.										T.							. 0.
Thompsons	Green		. 12		. 19																					36							
ropic	Colorado																																
Froutcreek Ranger.	Greendo																									. 09							. 0.
Victor	do																	T.								T.						T	
Vhite Rocks	do																. 04									1.							. 0.
W OOGSIGE		1						1	1	1	1														1		1					1	1
Arizona.																																1	
Allaires Ranch	Sonora		T.			. 21		. 04	T.														. 05										. 0
Alpine	Gila									1																						1	. 0
Ashfork	Verde									. 13																			-				10
Aztec	Gila San Pedro	1000							2.00				1																				. 0
Bisbee	do						. 24		28																								. 0
Blue	Gila					05	. 20		****									****															. 0
	do					. 05	.06																. 05					-1					. 0
Buckeye	do		25						. 46																***	855		with a way					. 0
Canille	San Pedro		50																***														. 0
Casa Grande Ruins.	do				5					ri .	1	1																					
Chandler	Salt		19					. 57			T.																	-					0
Chin Lee	Little Colo.				(1)	T.	90		1 60	.0													12										. 2
Chlarsons Mill	Gilado			. 10		. 02	. 12		. 20														T.										. 0
Cline	Salt	. 0	9 . 26	. 13	3				1.01																								: 0
Cochise	Desert					. 55			90																								. 1
Columbia	White	. 0	4				. 22	2	. 25																								. (
Dos Cabezos	Desert					. 16	. 37		. 22	. 10																							. 0
Douglas	Sonora				7																		T.										. 0
Dudleyville	San Pedro				2			T.																									. '
Fairbank	do																															1	1
Flagstaff	Little Colodo	0.	1 .21	7	Т.	T.		11	1 45	2 0	2				-	. 0	2					. 02											. (
Florence	Gila	8	0																														. (
Fort Apache	Salt						. 06																T.										. (
Fort Huachuca	San Pedro			00	2 . 20			41																						-1			
Fort Mohave	Colorado		4.0						. 55	2																							
Globe	Salt		45	5 . 3	5				. 66	0.0	3												. 09										. (
Grand Canyon Grand Canyon (1)	Colorado																																
Granite Reef Dam	Salt								41	3			1																	0 000			. (
Greer	Little Colo.																																
Hereford	Gila						1.13	3 . 2	0			· T							000														. (
Holbrook	Little Colo. Desert		1				. 0		0			L																					
Intake	Salt		20	0					*	. 4	0																					der.	
Jerome	Verde		1 . 5	5	- on					. 9	0	T											. 34										
Keams Canyon Kingman	Little Colo. Colorado		30	0	Т.																												. (
Lakeside	Little Colo.						20	0	0	7													Т.										
Lewis Springs	San Pedro .								2	0							T.																
Lewis opinigs	Little Colo. White		T	T	T.	0	2 1	3 0	1 .1	1 . 1							. 1.	1															
Lowell Observatory										6																							
Lowell Observatory McNeal Maricopa	Gila																																
Lowell Observatory McNeal Maricopa Moccasin	Colorado																																1 6
Lowell Observatory McNeal Maricopa Moccasin Mohawk Summit	Colorado Gila							-	4	3 .0	1																						
Lowell Observatory McNeal Maricopa Moccasin	Colorado					. 2	7		4	3 .0	1																						

Table 2.—Daily precipitation for December, 1912. District No. 9

															1)ay (of mo	nth.															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Arizona—Contd.																						-											-
Parker	Colorado							. 30	. 10																								0.4
avson	Gila	. 24						. 60	. 13												1												0.5
hoenix	Salt		. 14		1			-	. 69																		****						0.8
Phoenix (1)	do	T	. 10	T	1																									****			
Phoenix (2)	do			1.					. 00						****																		0.7
Pinal Ranch			.07																														0.7
	Gila			. 83																				. 12									1. 7
Pinto	Little Colo					****	T.									T.																	T.
Prescott	Hassayampa									T.													T.										1. 2
Prescott Dry Farm.	Verde	. 05	. 45						. 22	. 05																							0. 7
Quartzsite	Colorado								. 25	. 10																							0. 3
Redrock	Santa Cruz																								1	1000	1						
Rice	Gila	T.	. 06	. 63	3				. 05										1		1	1	. 20	T.	T.		1	1					0.9
Roosevelt	Salt	-					1																										1. 0
Sacaton	Gila								70																							***	
	Little Colo			0.0			. 10		1	1													OF.				0.000						1.0
St. Johns			70	T.	T.	m.	. 10																T.	1		1							1.3
St. Michaels	do	T.	T.	T.	T.	T.			. 05														T.										0. (
Salome	Colorado																																0. (
San Simon	Gila																																
Seligman	Verde		T.																														T.
Sentinel	Gila																									-		-		1			0.6
Silverbell	Santa Cruz		1. 10											1		1	1	-	1	1	1	1	1	1		1	10000	1	1	1	1		1.1
Snowflake	L. Colorado .					1			1	27											1							1					0.3
Springerville	do	1	1	1								10000		1			10000														****		1
	Colorado		.35	2000												****	****								****					***			4 . 6 .
Supai					100																												0.3
Tempe	Salt	T.	.07	. 02	2 T.																												0. 9
Thatcher	Gila		T.	1)		. 13		. 13																								0. 3
Tombstone	San Pedro					. 12			. 41																								0. 5
Truxton	Colorado		. 32						T.	T.																							0.3
Tuba	L. Colorado.	. 04	. 04						. 40	. 34								1									1		1		1		0.5
Tueson	Santa Cruz.								.37			2											1	1		1	1	1	1	1	1		0.
Tucson (1)	do					1	1						1	1																			0.3
Tueson (2),	do							T.	91	. 01	T	T.	1															1					0.2
Vail	do			1.	1.			1.1		. 03	1.		1																				0. 1
Walnut Grove	Hassayampa	10	90																														
																																	0.4
Wickenburg	do																		. 1														0.6
Willcox	Desert								. 13																								0.1
Williams	Colorado		. 08	3					. 1	. 09																							0. 2
Winslow	L. Colorado .																																
Yuma	Colorado								2	2																							0.
Yuma (1)	do		T.							T.										1	1		1										0.5
Nevada.																																	
	0-11-	1						-		0.					1																		
Caliente	Colorado						1			.00					. 10						4		1						3555	1000			0.
Las Vegas	do									T.						T.																	T.
Logan	do	1	1	1		1				1					1		180	1			1	1	1	1	1	1					1		T.

^{*} Precipitation included in that of the next measurement.

\$ Separate dates of falls not recorded.

| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 9, Colorado Valley.

Dat Max. 30 34 33 27 24	Min 4 - 3	Gr Riv Max.		Dura Max.	ango.	Gra		Guni	nison			1											-			1	-
30 34 33 27	- 4 - 3	-	Min.	Max.	Min	-			unpour.	Mee	eker.	Stear	nboat ngs.	Em	ery.	Hi	te.	Mod	ab.	St. G		Ver	nal.	Blo	om- ld.	Fo Bay	
34 33 27	- 3	35			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6/8	10 1	35 29 11 25	6 4 17 7 -12	35 39 42 35 28	16 13 17 15 6	35 33 39 32 31	16 18 24 22 8	32 29 31 23 33	- 4 - 7 - 7 - 5 - 3	30 35 38 34 23	- 5 - 2 16 0	34 29 36 25 24	14 - 7 16 9 - 3	58 60 66 55 52	21 23 22 26 18	49 41 44 42 41	28 30 27 28 32	49 45 46 40 35	20 23 25 19 25	57 58 58 58 52 48	27 32 24 25 28	33 35 33 31 31	16 9 11 13 8	43 47 47 39 29	16 16 16 16 5	53 50 55 49 42	2 3 3 2 2
27 33 40 39 31	6 5 0 4 15	34 24 37 35 38	-11 - 6 - 5 - 3 5	29 33 45 36 38	2 2 10 18 13	26 28 35 36 34	7 8 8 11 10	20 8 13 21 32	-15 -23 -22 - 7 -12	15 26 25 35 36	-22 -14 -13 - 9 3	19 27 36 29 31	-28 -17 -16 -11 18	51 50 52 52 51	21 20 18 17 16	40 39 45 42 41	23 20 24 31 28	35 33 32 39 39	10 8 21 16 20	49 52 48 51 50	23 24 25 30 24	25 29 29 31 34	1 0 1 4 8	30 33 44 46 39	- 1 - 1 4 18 12	35 40 40 37 44	2 1 2 3 3
34 34 44 35 38	- 1 11 4 2 1	43 42 35 33 30	9 3 4 4 4	30 36 41 42 42	15 15 11 14 15	34 28 28 29 29 28	9 10 23 23 14	28 30 28 29 21	- 9 -15 -14 -16 -17	34 35 39 40 30	- 4 - 3 - 2 - 1 14	37 40 42 41 41	18 - 8 - 6 - 6 - 5	45 47 49 51 52	12 13 11 12 13	40 39 38 35 36	33 32 31 30 30	35 32 33 34 36	15 28 29 28 26	53 50 51 52 50	20 22 25 22 28	34 34 33 36 31	3 6 5 4 4	31 39 38 40 50	22 12 6 12 12	47 45 45 57 56	2 2 2 2 2 2
37 29 28 27 15	$ \begin{array}{r} 4 \\ -1 \\ -4 \\ -9 \\ -22 \end{array} $	36 30 25 23 24	9 11 15 - 5 2	40 33 35 41 34	13 13 7 9 7	33 35 32 32 32 32	18 15 7 8 7	36 28 33 29 20	- 5 4 -16 - 7 -20	36 30 30 25 33	- 3 13 13 - 5 -15	40 24 25 27 24	7 16 3 9 - 7	50 56 58 51 56	13 14 11 10 11	42 50 48 48 39	27 24 24 23 26	42 43 43 47 35	16 20 21 14 11	51 57 54 55 48	21 20 20 18 23	33 34 34 35 27	7 6 4 4 0	42 41 41 43 36	19 15 7 10 1	47 51 46 58 49	2 2 2 2 2
18 31 26 20 25	$ \begin{array}{r} - 4 \\ 4 \\ 10 \\ -12 \\ - 7 \end{array} $	24 34 32 25 23	-14 1 2 5 -12	32 34 31 37 35	3 7 2 3 8	30 29 29 30 30	10 8 7 2 9	9 16 8 20 25	-24 -24 -27 -22 - 8	26 17 26 36 30	- 9 -23 -16 - 3 - 9	24	-25	58 52 50 52 50	12 10 9 - 3 3	35 40 34 41 42	20 21 17 16 19	30 32 32 35 38	9 10 6 6 7	42 46 46 48 50	18 19 14 13 13	26 23 24 30 35	5 - 5 - 3 - 1 2	37 30 27 35 35	$ \begin{array}{r} 0 \\ -5 \\ -16 \\ -14 \\ 5 \end{array} $	42 37 41 47 48	1 2 1 1 2 2
30 31 31 31 23 21	$ \begin{array}{r} -6 \\ -5 \\ -10 \\ 12 \\ 12 \\ -8 \end{array} $	32 30 36 37 31 39	5 - 5 - 2 1 2 0	32 41 43 38 44 41	5 4 9 8 12 13	31 32 27 31 40 36	6 8 1 2 12 12	19 21 16 33 35 23	-23 -22 -23 -13 - 3 - 9	20 25 24 29 38 40	$ \begin{array}{r} -20 \\ -12 \\ -10 \\ -11 \\ 22 \\ -8 \end{array} $	12 26 27 27 30 26	-29 -21 -20 11 13 -22	42 41 40 45 42 40	4 6 8 2 3 2	37 39 39 41 55 49	21 18 16 15 30 23	34 34 30 36 45 40	7 6 5 5 14 15	49 49 47 48 54 48	16 10 10 10 20 18	27 21 16 19 41 33	- 5 - 4 - 4 - 5 - 2	31 33 33 36 42 41	$ \begin{array}{r} -12 \\ -12 \\ -11 \\ 0 \\ 2 \\ 3 \end{array} $	43 44 45 50 54 55	2 1 1 2 2 2 2
	33 40 39 31 34 34 44 35 38 37 29 28 27 15 18 31 26 20 25 30 31 31 31 31 31 32 33 33 34 34 34 35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	33 5 5 40 0 39 4 31 15 34 11 34 44 43 35 2 27 -9 15 -22 18 -4 31 4 26 10 20 -12 25 -7 31 -5 31 -5 31 12 21 -8	33	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$													

										Aria	ona.											
Date.	Bis	bee.	Flag	staff.		ort che.§§		and yon.	Par	ker.	Pho	enix.	Pres	eott.		t. naels.	Tuc	son.	Yu	ma.	Logar	n, Nev.
	Max.	Min,	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	56 58	37 41 37 33 34	41 35 40 35 23	29 23 16 19 8	74 76 68 64 62	18 35 32 15 12	34 30 34 36 36	24 30 22 12 10	74 74 74 65 70	41 33 32 28 28	70 61 64 62 57	53 45 40 42 36	52 43 47 43 35	38 31 24 26 16	46 41 44 38 30	24 22 27 20 7	69 68 58 65 53	40 42 34 32 30	73 69 72 72 72 58	48 48 41 38 47	63 64 65 61 54	38 37 29 27. 27
6	40 40 51	18 27 32 36 29	25 31 31 30 35	15 16 18 13 5	42 54 66 60 66	10 5 14 16 24	32 20 30 51 32	8 7 4 18 9	72 70 58 56 62	28 39 45 30 30	56 62 55 60 58	35 42 43 40 40	36 45 36 36 41	15 15 24 21 24	29 38 36 40 41	12 2 9 17 15	53 62 56 58 50	18 42 38 33 35	59 62 57 55 62	43 41 46 43 40	53 57 55 59 59	28 33 38 36 28
11,	48 51 55 53 61	32 28 30 33 36	34 30 32 43 40	0 2 6 7 14	54 62 60 66 62	6 5 7 6 8	34 33 32 30 30	6 12 6 8 11	70 71 69 70 70	28 30 30 29 29	60 65 69 68 67	34 39 42 40 41	45 45 46 50 50	14 17 19 15 21	31 39 49 52 48	7 12 10 7 9	60 66 64 72 71	29 35 41 34 39	64 67 69 69 69	36 39 44 41 39	59 58 60 60 57	25 29 27 26 29
16	53 56 52 60 57	33 33 32 32 42	41 43 44 49 28	14 25 18 14 8	68 64 68 62 58	11 8 17 12 10	30 28 34 36 34	14 16 17 19 12	70 70 70 70 70 70	30 30 28 29 25	60 60 66 65 60	37 33 35 31 30	50 49 51 55 42	19 24 19 17 16	41 36 35 56 37	12 14 16 8 7	58 61 65 66 63	31 27 28 30 24	66 69 72 69 64	33 35 43 43 42	56 59 61 61 54	22 23 28 27 35
21. 22. 23. 24. 25.	47 44 53	28 26 21 24 28	23 28 34 48 36	7 15 5 9 19	60 64 60 64 66	0 11 8 6 12	20 22 24 26 45	10 10 12 10 8	61 58 64 64 68	20 22 20 20 20	53 57 58 63 59	31 34 29 29 29	39 36 47 52 43	13 15 7 11 23	33 31 38 47 40	0 5 -2 2 15	61 50 56 65 64	23 29 19 21 24	60 58 61 65 65	36 42 35 31 29	49 51 54 53 55	22 28 19 7 20
26. 27. 28. 29. 30. 31.	45 53 52 58	27 31 23 28 29 31	32 33 43 43 50 48	19 6 4 10 19 16	70 64 60 62 60 64	$ \begin{array}{r} 12 \\ 8 \\ 6 \\ -2 \\ 8 \\ 10 \end{array} $	47 32 40 43 32 32	0 22 8 5 20 18	64 68 64 64 68 71	20 20 20 18 27 27	58 65 61 61 62 64	36 32 32 30 33 32	42 51 49 50 56 54	17 8 12 10 23 21	39 47 45 40 48 49	9 2 2 3 16 9	56 61 65 59 64 70	19 37 32 21 21 23	62 61 64 68 69 71	44 39 34 29 34 35	55 58 53 53 58 51	20 19 12 13 23 21
Means	50.2	30.7	36.4	12.9	62.9	11.3	32.9	12.5	67.4	27.6	61.5	36.3	45.7	18.5	40.8	10.3	61.6	30.0	65.2	39.3	56.9	26.0

a, b, e, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

GENERAL SUMMARY.

Comparatively cold weather prevailed over the Great Basin during December, but the month as a whole was not so cold as December of last year, which, it will be remembered, was one of the coldest on record. The month's precipitation for the district averaged only about one-third of the normal amount, and it was the least in December for some years.

For the district there was on the average 15 clear days, 9 partly cloudy, 7 cloudy, and only 3 rainy days.

TEMPERATURE.

The temperature for December averaged 28.5°, which is 2° below normal. The warmest weather was experienced in the northern valleys and southern counties of the Utah area, and in the southern and west-central portions of Nevada, while the coldest weather occurred in the Wyoming area.

The local mean temperature ranged from 14° at Evanston, Wyo., to 39.9° at Jean in southern Nevada. Every station in the Utah area reported means below normal; but in the remaining portions of the district the cold weather was not so general, and many stations in the Nevada area reported means above normal. The greatest deficiency was 8.6° at Thistle, Utah, whose mean was 18°; and the greatest excess was 3° at Carlin, Nev., whose mean was 29.4°.

The month began warm and continued so for a decade, although a few stations reported their lowest temperature during this period. It was warmer generally during the second decade, and the highest temperatures occurred usually on the 13th and 14th. The coldest period of the month was the last decade, and the lowest temperatures occurred generally from the 22d to the 27th.

The following were the highest temperatures that occurred in the various areas of the several States of this district: 40° at Border on the 13th and at Cokeville on the 14th and other dates, both in Wyoming; 54° at Grace, Idaho, on the 13th; 61° at Fillmore on the 13th; 56° at Silver Lake, Oreg., on the 11th; 53° at Tahoe, Cal., on the 13th; 68° at Jean, Nev., on the 23d.

The lowest temperatures were: -15° at Border and Cokeville, Wyo., on the 22d; -10° at Paris, Idaho, on the 22d; -20° at Thistle, Utah, on the 22d; -6° at Cliff, Oreg., on the 26th; zero at Truckee, Cal., on the 26th; and -12° at Potts, Nev., on the 22d.

PRECIPITATION.

The precipitation for the district averaged 0.46 inch, or 0.77 inch below normal. The largest amounts fell in the northern part of the Utah area, and the least in Nevada. Four stations in the Utah area reported only traces, and 17 in the Nevada area reported traces or none at all. Of those stations having a 10-year record or more, only two reported amounts above their normals, namely: Thistle, Utah, and Silver Lake, Oreg. The largest monthly amount was 4.35 inches at Deer Park, Cal. The largest 24-hour amount was 3.10 inches at the same place on the 14th and 15th.

SNOWFALL.

The water supply estimated from the snowfall at the end of December was not encouraging. In the Utah area there was less snowfall during December than for the same month last year, but in many places it was well packed and in good condition for late keeping.

A study of the snowfall in the Nevada area shows that the snowfall was greater during December, 1912, than in the corresponding month of 1910, except in the Walker Basin, where it was less; but much less in all drainage basins than in 1911. But the snowfall for the season up to December 31, 1912, discloses the fact that this season's snowfall is greater than that of the corresponding period of 1911. There was little snow on the ground below the 5,500-foot level. At the 6,240-foot level there was 7 inches on the average, but at the 8,600-foot level there was 37 inches.

Table 1.—Climatological data for December, 1912. District No. 10, Great Basin.

			year	Tem	perature	, in o	degre	es Fal	renh	neit.	Prec	ipitation	, in in		days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more,	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	775	Observers.
Wyoming.	Tinto	6,085	10	16.8	+ 2.9	40	13	-15	99	38	0.10	0.67	0.04	1.0		13		10	w.	S W Condres
orderokevillevanston	do	6,204 6,860	2 16	16.6	- 5.9	40 40 34	141		22 22 14	36 31	0.22	- 0.67 - 0.87	0.10	5.2 4.0	4 4	20 13	8 5 9	6 9	W.	S. W. Condron. E. J. Tuckett. Frank Tucker.
Idaho.																				
eneva		6,171	4								0.51		0.31	7.0	2	14	13	4		F. W. Boehme.
racearis		5,400 5,946	5 17	24.0	+ 1.3	54 45	131	- 9 -10	27 22	35	0.70	- 0.31	0.40	7.0	3	14	6	10	nw.	E. W. Joy. John Norton.
eston		4,460	14		- 0.8	51	14	- 3	23	33		- 0.75	0. 10	3.5	4	14	5	12	n.	Wm. T. Chatterton.
Utah.																				
lpine	Utah	4,900	13								0.90	- 0.26	0.60	9.0	2	21	4	6		T. F. Carlisle.
eaver	Beaver	6,000	8	21.2		51	13	-10	22 26	48	0.30		0.20	3.0	2	10	20	6	sw.	M. J. Shelton.
lack Rock			8	19.4		54 50	13	- 8 -10		47	0.01		0.10	2.0 0.1	1	14			n.	W. D. Livingston. F. R. Curtis.
astle Rock	Summit	6,244	7							39	0.53		0.20	10.5	8 5	16 16	7	8	w.	David Moore.
dar City				30.2		53 53	13	- 9	22 23	53	0.13		0.04	2.0	4		5 4	7	S. S.	Parley Dalley. L. C. Peterson.
arkston	Cache	5,930	40						95	33	0.60	- 1.25	0.45		2 2	15	9 5	7 8		W. J. Griffith.
orinneeseret			17		- 5.8		9	- 2	25	00	0.30	- 1.20	0.20	3.0		18			******	A. C. Murphy. S. W. Western
berta	Utah			25.4		49	10		1	35	0.21			3.0	3	20	4	7	P.	D. C. Walkey.
nterprise	Washington	4,850	6	*****			****	*****			*****		******							John Day. N. W. Erekson.
rmington	Davis	4, 267	11	28.3	- 2.4	46	13	6	6			- 1.38	0.40	6.5	2 7	21	7	3	n.	Charles Boylin.
ilmore		5,100	20		- 3.2		13	4 0	26 22	33	0.38	- 0.72	0.11	3.0	3	2	27	2	S.	J. J. Starley. Herbert C. Cutler.
arrison	Millard	4,850	9		- 2.7	60	14	- 5	22		T.		T.	T.	0					E. M. Smith.
overnment Creek	Tooele	5, 277 4, 560	11	25.6	- 2.7	50 54	14	0	221	34	0.38	- 0.50	0.13	4.5	1	18	2	11	S.	Walter James. Geo. E. Greene.
artsville	Tooele	4,220	1								0.21		0.11	7.4	5	15	12	4	SW.	J. C. Woodmansee.
rouse Creek	Boxelder Wasatch	5,148 5,593	19	18 9	- 40	49	14	-14	22	40	1.04	- 0.75	0.24	17.0	5	11 20	10	10	n. n.	Phillip Paskett. John Crook.
enefer	Summit	5,301	12	20.8	-4.0 -3.0	52	14	-13		41	1.05	- 0.75 - 0.62	0.39	10.8	8	16	5	10		William Brewer.
ooper	Weber	4,436	1								0.32			3.2	2					T. M. Jones, jr.
apah (rear)	Millard	5,250	8	32.3		61	13	5	22	35			T.	T.	0	12	7	12	n.	J. S. Lawton. John J. Watson.
ера	Tooele	4,356	1	28.5		52				40	0.25		0.15		2	11	5	15	n.	John J. Watson. Geo. K. Hubbell.
nction	Juab Piute	5,000 6,000				****					T.		Т.	*****	0	23	4	4	n.	A. M. Laird. Joseph Jensen.
anosh	Millard	5,250	5						00	40	0.76		0.30		5			1		Geo. Crane.
eltonemay	Boxelderdo	4, 230 4, 221	32	26.8	- 7.0		8			46 23	0.27	- 0.47	0.20	2.7	3	11	19	12	se.	F. W. Klock. Agent S. P. Co.
van	Juab	5,010	22	23.3	- 2.1	49	13	- 1	231	33	0.78	- 0.93	0.35	7.8	6	19	4	8	nw.	Agent S. P. Co. William Brown.
gan		4,507	21	25. 4 32. 0	- 0.2	46 60	13	2 5	23	33	0.35	- 0.76	0.20	5.0	6	18	9	4		Utah Experiment Stat Agert W. P. R. R. Co.
icin	Boxelder	4,504	5																	R. G. Crocker.
and		5,086 5,575	17	23.0	- 2.1	50	14	- 7	26	38	0.45	- 0.48	0.14	30.2	5	15	0	16		Job F. Hall. J. M. Arderson.
aple Creek	Utah	4,850		20.0							0.71		0.65	12.0	3	11	8 5	12		Lewis W. Gillilar.
arjoparysvale	Summit	6,400	7 12	99.4	9.5	69	31	- 3	27	43	1.10	- 0.46	0.38	15.0	8	9 8	5 16	17	nw. n.	Jas. Woolstenhulme. John W. Herry.
eadowville	Rich	6,200	11	23.4	- 2.5 - 1.8	52 49	15	- 1	22	35	0.80	- 0.27	0.50	7.0	2	17	3	11	w.	J. S. Moffat.
dlakedvale	Boxelder	4,235 4,365	1	32.0 27.6		44	4	22	22 5	13 36	T. 1.11		T. 0.52	T.	6	20	5 21	6	S.	Agent S. P. Co. M. J. Joy.
llford	Beaver	4,962	4			54 58	201	- 7	29	49	0.26			2.6	4	19	0	12	n.	Agent, Salt Lake Rout
lls	Juab	4,911									0.03	0.00	0.03				10		n.	Geo. McCune.
llvillenersville	Beaver	4,848 5,070	17 8								0. 09	- 0.85	0.18	4.5	6	8	18 14	5	n.	Fred Yeates. Fred R. Pryor.
odena	Iron	5,479	11	26.8	- 4.9	53	13	- 7	27	40	T.	- 0.58	Т.	T.	0	25	6	0	W.	U. S. Weather Bureau.
organoroni	Morgan	5,068 5,519	7	22.4 24.7			14	- 7	23	34	0.11		0.09	12.5	2 7	13	10	8	SW.	E. O. Kingston, B. F. Eliason,
osida	Utah	4,510																***		R. P. Curtis.
ephi [near]		5,119 5,150	7							****	0, 25		0.13	** ***	2					S. Boswell. T. W. Jones.
k City	Millard	4,900	5	28.6		53	13†	4	22	36	0.39		0.15	2.0	4	16	7	8		Peter Nielson.
dennguitch	WeberGarfield	4,310 6,560	41	27.1	- 4.4		14 31	- 8	21 26	33 46	0.41	- 1.29	0.10		6	14 20	3 9	14	е.	A. Van De Graff. John N. Henrie.
rk City	Summit	7,800	7	20.4			2	- 7	22	57	1.61		0.90		7	2h	8h	13h		Gertrude Evans.
rk Valley	Boxelder	5,200 5,970	1 21	28.4	- 0.4	53	13	0	26	39	0.30	- 0.66	$0.20 \\ 0.17$	7.0 3.0	2 2	12 20	13	6 7	nw.	A. O. Evans. Alex. Matheson.
yson	Utah	4,637	8		- 0.4	00	101		20					3.5	4	20	6	5	ne.	D. L. Coombs.
lican Point	Summit	4,600 8,250	1	*****									*****							B. M. Mendenhall. J. E. Leavitt.
nto	Washington	5,907	14	25.5h	- 1.6	51	12	- 1	23	48	0.07	- 0.76	0.05		2	16	7.	3 •	n.	J. H. Harrison.
ontifulomontory		4,262 4,913									0.10	- 0.51	0.05	4.0	2 2					C. L. Drumm. F. C. Houghton.
ovo	Utah	4,532	33 23	24.4	- 4.5	51	131	- 6	22	34		- 0.48	0. 70	10.5	4	17	12	2	n.	James A. Oliver.
ndolph	Rich	6,442	10																	Wm. Rex.
vier	Sevier	5,006 5,350	18										*****			****				E. L. Terry. Joseph J. Jensen.
chmond	Cache	4,529							00		0.54		0.35	7.2	5	8	15	8		J. R. Thompson.
ltairlt Lake City	Salt Lakedo	4,220	38	29.4	- 1.4	48 51	31	14	23 22	23 20	0.21	- 0.53	0.10	2.5	5 7	14	5	12	se.	E. J. Bench. U. S. Weather Bureau
ipio	Millard	5,260	17	27.1	- 1.4 - 0.2	57	14	- 12	26	55	0.61	-0.55	0.37	5.0	5	14	3	14	SW.	Thos. Memmott.
owellver City	Boxelder	4,650 6,127	2	21.7		51	14	- 6	201	38	0.39		0.12	2.8	5	14	13 16	4	sw.	I. Richard Ilgner. J. L. Stark.
anish Fork	Utah	4,585	2	24.6		48	111		21	33	1.20		0.80	14.0	2	19	6	6		Reclamation Service.
rawberry Tunnel west].	do	7,650	6	21.2	******		13	- 3	6	38	2.00		0.90	28.0	9	15	10	6		Do.
istle	do	5,075	18		- 8.6		30	- 20	22	46		+ 2.31	1.00	38.0	8	11	18	2	n.	John Thorgierson.
oele	Tooele	4,900	16	28.6	- 0.7	51	14	7	22	29	0.43	- 0.62	0.13			8	7	16	se.	E. A. Bonelli.
endover	do	4,237	i		******	50	201	9	23	32	0.49	*******	0.21	8.0	7 7 2 3	19	7 23	3	nw.	J. S. Cooper.
hisky Creek	Millard Rich	4,850	1 10								0.54			4.0	3					Geo. Stevens.

TABLE 1.—Climatological data for December, 1912. District No. 10—Continued.

			PERTS	Tem	perature	, in d	legre	es Fat	renb	elt.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	1
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	er of rainy inch or me	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind d	Observers.
Oregon.										-			-			*				
Burns	Harney	4,157	21																	
liff	Lake	4,300	9	25.8		50	11	- 6	26	51	0.44	*****	0.17	2.0	7	6	15	10	w.	
Paisley	do	4,500	15	26.9	- 2.9	56	ii	- 2	27	43	1.88	+ 0.76	0. 60	15.0	6	15	12	4	w.	
California.		7				-					-									
Cathedral Park	Eldorado	6,650	0	33. 2		52	12†	15	221	20	2.70			29.0	4	13	8	10	8.	Carl Fluegge.
ahoe		6,240	2	29.4		53	13	6	25	28 34	2.09		1.00	24.0	5	24	1	6	w.	R. M. Watson.
l'ruckee	Nevada	5,819	41		- 2.9	50	12	0	25 26	43		- 4.59	T.	T.	0	2	29	0		Southern Pacific Co.
Nevada.														-						
Austin	Lander	6,594	23	26.8	- 4.1	55	13	3	23	30	0.60	- 0.64	0.25	6.0	5	19	0	12	nw.	F. O. Booe.
Battle Mountain	do	4,843	41		+ 1.5	62	1†	0	22†	52	0.30	- 0.49	0.10	3.0	3	20	0	11	W.	Southern Pacific Co.
Beowawe	Eureka	4,905 6,232	41		- 3.4	53	14	- 7	21 25†	37 50		- 0.29 - 0.23	0.30	5.5	3 7	12	11	8	se.	Do. Do.
Carlin	ElkoChurchill	4,032	5	31.7	+ 3.0	67 59	13 18	- 2	201	40		- 0.23	0.43	10.0	ó	15	8	8	w.	U. S. Reclamation Service
Cherry Creek	White Pine	6, 450	4	27.3		53	13	- 6	22 22	39	0.33		0.16	5.8	5	11	15	5	w.	J. H. Leishman.
lover Valley	Elko	6,000	11		+ 1.0	52	121	- 2	201	39		- 0.58	0.51	0	4	12	14	5		I. F. Wiseman.
olumbia	Esmeraida	5,750	5	30.8		54	3	8	26	34	0.06		0.06	1.0	1	24	6	1	nw.	A. Booth.
Dry Farm	Elko	5,600	0	29.0		51	13	3	22 22	39			0.10	2.8	4					Walfrid Sohlman.
Elko	do	5, 432	41	25.6	- 1.4	53	13	- 4	22	40	0.26	- 0.90	0.11	3.2	6	24	0	7	W.	E. J. Clark.
Eureka	Eureka	6,500	9	27.4		53	3	- 9	22 27	41	0.69		0.40	11.5	6	11	9	11	n.	Clay Simms.
Fallon	Churchill Lyon	3,965 4,200	39	30.8	1.0	58 60	17 13†	1	27	48 50	T.	- 0.53	T.	T.	0	18 18	13	0	nw.	U. S. Experiment Station Mrs. G. A. Steele.
Fernley	Douglas	4,830	12	31.10	-1.0 -1.3	610		3.	27	480		- 2.15	0.00	0	0	10	10	0	w.	Forest Service.
Perlach	Washoe	3,931	0		1.0	01	101	3.		10	0. 20		0.20	2.0	1	****			nw.	Western Pacific Co.
leyser	Lincoln	6,055	8	20.8		55	11+	-10	261	60	0.00		0.00	0	0	12	17	2	n.	Mrs. J. F. Wambolt.
Glenbrook	Douglas	6,240	3	32.6		54	1	13	22†	31	1.00		1.00	12.0	2	17	10	4	sw.	C. C. Henningsen.
olconda	Humboldt	4,697	33	21.1	- 0.0	55	18	3	22	36		- 0.63	0.20	2.0	1	11	13	7	W.	Southern Pacific Co.
Halleck	Elko	5,631	19	25.5	+ 0.6	54	10	- 7	22	51	T.	- 1.16	T.	T.	0	25	3	3	SW.	Do. G. B. Stannard.
Hawthorne	Mineral	4,569 2,074	18	39.9		68	23	· · · · · · ·	20	56	0.00	******	0.00	0	0	29	9	0	ne.	Salt Lake Route.
ahontan	Churchill	4,200	0			60	18	9	29 21	35	683		T.	T.	0	19	7	5	W.	U. S. Reclamation Service
Lewers Ranch	Washoe	5,500	24	34.0	- 0.4	57	14	10	22	39		- 3.27		4.0	2	12	13	6		Ross Lewers.
Lida	Esmeralda	6,037	0																	L. F. Detwiler.
Lovelocks	Humboldt	3,977	18																	A. P. Tilford.
McDermit	do	4,700	23	04.6							0.10		0.10			00	1			Scott Sterling.
McGill	White Pine	6,338	21		- 2.0	53 55	18†	- 7 - 5	22 21	41 50	0. 10	- 1.15	0.10	1.0	0	20 18	5	8	8. n.	R. E. Middagh. Fred J. Jones.
Millett	Nye Mineral	4,600	5			99	101	- 0	21	30	0.00		0.00	0	0	22	0	9	н.	Southern Pacific Co.
Dasis Ranch	Esmeralda	5, 106	0	30.4		63	1+	0	27	55			T.	T.	0	26	3	2	8.	A. S. Patterson.
Potts	Nye	6,990	19	24.4	- 0.5 - 3.6	50	13†	-12	22	41	T.	- 0.51	T.	0	0	15	4	12	n.	Miss Mamie Potts.
Quinn River Ranch	Humboldt	4,850	10	26.01	- 3.6	56 f	8	01	23	49 f		- 0.67	0.04	0	3				W.	F. M. Payne.
Rebel Creek	do		0								0. 13		0.05	2.5	3	10	11	10	sw.	E. J. Hyatt.
Reno	Washoe	4,532	41	34.0	+ 0.3	60	3	10	27	45	0.09	- 1.58	0.07	0.6	3	15	13	3	W.	U. S. Weather Bureau. U. S. Reclamation Service
Soda Lake	Churchill	4,534	34	96 4		64	2		26†	58	Т.	- 0.60	T.	T.	0	7	15	9		Southern Pacific Co.
CecomaConopah	Elko Nye	6,090	7	30.4	+ 0.3	64 53	31	-11 10	201	23	400	- 0.00	T.	T.	0	18	9	4	w.	U. S. Weather Bureau.
Wabuska	Lyon	4,347	8	33.51		571	31	81	22 20	501	0.00		0.00	0	0	40				J. G. Young.
Wells	ElkoHumboldt	5,631	40	24.6	- 0.5	52	16	- 6	19†	38	0.00	- 1.25	0.00	0	0	13	2 5	16	w.	Southern Pacific Co.
Winnemucca		4, 432	33		- 0.7	57	13	4	6	41		- 0.72	0.09	2.0	7	12		14	SW.	U. S. Weather Bureau.

•, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 10, Great Basin.

Stations	Watershed.														,)ay	of me	onth.	-														_
Stations.	watersned.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Wyoming.																																	
order	Bear				T.									T.			. 01	T.				T. T.					****			.02	.04	. 03	
vanston	do				.01										T.		.08				****						****			T.		.10	
Vanston		****	****	****	1.00				****				****				****	****	****	****	****	. 10											-
Idaho.																																	
eneva	Bear																.31							70		70		(D)	· m	70		. 20	0
racearis	do														10	. 05		****	.05	.02				T.	****	Т.		T.		T.	.20	.40	0
eston	do														. 10											.07					.05		
			1					-																									
Utah.																														1	1014		1.
pine	G. S. Lake	T.	.10	T.	.30											T.	.60		***	****		T.	****		****	20			****		***		0
averack Rock	Sevier Lake.			1.					****																	.10							0
rrville	do																																. 0
stle Rock	G. S. Lake				.15	.03				T						.03															. 02		0
dar City	Desertdo					.25				1.						.02														1	T.		1
rkston	G. S. Lake															. 45																	. 1
rinne	Sevier Lake.																. 20													. 10			. (
berta	G. S. Lake															****		.14															. (
terprise	do												0000			****																	
eksonrmington	G. S. Lake				28								10000				.40	T.	T.							T.					****	T.	1
llmore	Sevier Lake.		. 03		. 04	.07	.01										10	02				PP.				.11							. (
rland	G. S. Lake																. 24		****		****	***	m.	.08				T.					
overnment Creek	Sevier Lake.						****				1						.05									.13			****		.10		1
anger	do				.40											****																	. 1
antsville	G. S. Lake												****			T	.24	.01							.01 T		****		03	.06		.11	
ouse Creek	Desert G. S. Lake				1.											1.	. 44	.20				T.				.02	. 15		.00				
nefer	do	. 10)		.19											. 05	. 39	.10		T.		.02				T.			T.		.10	.10)
oper	do																							****	****				****		T.		. 1
apah (near)	Desertdo								****							****					****												
epa	do				T.												T.					.10									T.		. (
V	do															db.													****				1
nction	Sevier Lake.		.10																														. 1
elton	G. S. Lake																	. 20													. 02		. !
may	Desert Sevier Lake.															.03	.35					02				18							1
gan	G. S. Lake															.20					. 05				. 03					.02		. 02	3
W	do																					.10									T.		. (
icin	Desert														****							****					****	****		1			-
nti	Sevier Lake.		. 10		T.											T.	.06									.14					.06		. 1
ple Creek	G. S. Lake				.04											* T.	. 65			70	T.	· · · ·			- * * *	T.				T.	15	T.	
rion	Sevier Lake.	02	.05			.05										.01				T.	1.	1.				. 08						. 19	
adowville	G. S. Lake				T.												. 30													T.		. 50	
dlakedvale	do				T.											. 05	T.													. 08	T.	T.	
lford	Sevier Lake.			1	0.0											. 00	. 20		. 02						.00		. 02						
illville	G. S. Lake			. 02													. 18									.06	T.				. 03		
lls	Sevier Lake.				T.		T.										. 03									.02							- 1
nersville	Desert				T.	.02				T.						. 01 T.							. 01			.02							
organ	G. S. Lake			. 00																													. 1
oroni	Sevier Lake.															. 06	. 32	. 28		T.		. 03				.07					. 02	T.	
osida ophi (near)	G. S. Lake												1																				1
weastle	Desert		. 12													. 13																	. 1
k City	Sevier Lake. G. S. Lake				. 05												.08	. 27			m.	T				. 15			T	0.		.11	4
dennguiteh	Desert		1		. 06												4.																
rk City	Desert G. S. Lake					. 06	. 02										. 09				. 20	. 04									. 90	.30	3
rk Valley	Desertdo				17												. 20															. 10	
y90n	G. S. Lake				.05											T.	T.	. 23								. 10				0.	5		
lican Point	do																		1								1						
ne Cliff Ranch	Desert																05						02										-
entiful	G. S. Lake																	. 05							. 05								
omontory	do								. 20																		. 20)					-
ndolph	do				. 20												. 70	. 10								. 05					Т.		
vier	do																																
hfield	Sevier Lake.																			1													
hmondtair	G. S. Lake			T.	m.												. 35	. 10		T.	. 05	T.			. 07	00	****		T.	. 01		.01	
t Lake City	do	****			. 22											. 16	. 20	. 04		T.	.00					. 08					. 01	. 09	9
pio	Desert		. 03		. 03											T	T.	. 37				T.		1		. 15					03	3	
owell	do				. 10											. 06	. 12	10				. 06										. 08	5
ver City	do G. S. Lake		. 09	T					****							. 12	. 30	. 13		****		****	****	****	****	T.		****					
awberry Tunnel,	G. S. Lake															. 05	. 90	. 28		. 05											. 05	. 0	
vest.			1																						1				1	1			
istleoele	do				. 60	.01	T					****			****		1.00 T	. 80		·m·	. 20	.02				. 40	. 20				03	. 30 T.	0
rnon	Desert				. 21	. 02										T.	. 07	. 09			.07	. 03			****	. 02				T	. 03	T.	
endover	do				T.												T.	T.								. 10					. 15		. 1
nisky Creek	Sevier Lake.	. 14			****			****		****			****						. 20														
	NOVIOL LEKE.			****																													-16

TABLE 2 .- Daily precipitation for December, 1912. District No. 10-Continued.

	W														1	Day	of m	onth	l.														
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Oregon.																																	
Ana River	S. E. Drain-			T.	. 03	3								. 10	T.	. 22			. 01					T.	. 02					. 05	. 21	. 15	0.
Bear Valley	age. do	10	0	25	j	71									40	. 80	60	.08		25								. 08					3.5
Burns	do	. 1		. 24			1	1										.00										1		****			G
Burns Mill	do	. 20)											. 65	. 70	. 10	. 40				1								. 30	. 20			2.
Christmas Lake	do	T.		. 20)								T.	. 03	. 16	T.		. 08	. 02	·					T.	. 05	· · · ·	T.			. 16		0. 7
Cliff Diamond	do	1		1		1		4	1			1	1			. 12									1.					****	. 14	. 06	U. ·
Embody	do		. 03	. 04	. 15											. 20	. 20							. 30				. 10		. 32			1.
Fort Rock	do	. U.		. 10									. 12	T.	. 21	. 02			T.					T.	. 04					. 40		. 18	1.6
Paisley Seneca	do				20								T	19	11	. 32	15	T	T		09		T.		.06				****	.04		. 02	1.
Silver Lake	do	.00		.01	20					*****			17														- 60)	. 26				1.8
Valley Falls	do												T.	. 54	. 12						. 06												
California.																																	
	Truckee										1				T.	. 96	.04										1		T.	T		. 04	1.
Bijou Boca	do				. 10										1.20																		1.3
Bridgeport	East Walker															-	. 50																0.4
Cathedral Park	Truckee														*	3. 10	2.50													*	. 20		2.
Deer Park Hobart Mills	do				17									T.						,	****				.01							.11	
Lundy	East Walker															. 14																	0.1
VcKinneys	Truckee				. 02									. 01	*	1.00	. 65														.38	. 29	2.
Markleeville	East Carson.															. 82															T.		0.8
Shields Ranch Silver Creek	East Carson.															1.00							1-0									. 01	
Tahoe	Truckee				. 20)										1.00	. 50													T.	.22	. 17	
Tallac	do														T.	- 85	T.														T.	. 20	1.0 T
Truckee Woodfords	West Carson														*	1. 10	.02								T.					****	****	****	2.0
	west Carson															1. 10	. 02					1											-
Nevada.											1																			1			
Arthur	Humboldt			1 *	.20											. 20	. 10	. 10)											. 20			0.8
Austin Battle Mountain	Reese Humboldt			. 10	1 . 10											10													****	****		****	0.
Beowawe	do	T.			. 0	5						. T.			T.	.30	.20				T.									T.		T.	0.
Carlin	do			. 10)								. 10		. 20	. 23	.20													. 10	T.	. 04	
Carson Dam	Carson																			00		10										703	0.0
Cherry Creek Clover Valley	Humboldtdo				. 00																		1		****							.26	
Columbia	Desert															.00																	0.0
Dry Farm	Humboldt				. 0	3										. 07	.10	.05															0.5
Elko					T.												-11	.08	3			T.		****			3			.01		. 04	0.
EurekaFallon	Carson				T.											T.	.00				****		1						1	T.			T.
Fernley	Truckee																								T.								T
Gardnerville	Carson																										-						0.
GerlachGeyser	Desert Humboldt				. 20	0												****						****	****	****				****		****	0.
Glenbrook	Truckee							1	1	1		1			*	1.00			1111	1											T.		1.
Golconda	Humboldt			20)																									T.			0.
Halleck	do															T.		T.												T.			T
Hawthorne Jean.	Desertdo															****								****		***					****	****	0.
Lahontan	Carson				T.										T.													T.					T
Lewers Ranch	Truckee				T.											*	.85	·														T.	0.
Lida	Desert																									****	***					****	
Lovelocks McDermit	Humboldt				1:::									***									1		****	****		1					
McGill	do			1		T.	1										. 10					T.											0.
Metropolis	do				. T.												. 05				. T.				Т.					T.		T.	
mill City	do																		5							***	* ***		. 02			***	0.
Millett	Reese Desert				****								***		****		****			****			1										0.
North Fork	Humboldt	1								1			1		*	1 . 03	30	N	1			1 . 10	M		1					04	. 10	.06	0.1
Oasis Ranch	Desert															T.						T.				700							T.
Potts. Quinn River Ranch	Reese	T.		T.												T.	T.	06	2 .00							T.							0.
Rebel Creek	do	1		1	1 0	R.					1	1		T.		1	0.00	T	T		T									00	3		0.
Reno	Truckee			. 0	1 . 0	1									T.	.0				. T.					T.								0.
Skelton	Humboldt				20)											- 96																0.0
SmithSoda Lake	West Walker														- 10		1						1				1		· inne				
Spooners Kanch	Carson Truckee					. 1	T									1.00	T.						T.			T.	T.		T	T.			1.
Sweetwater	East Walker					. T.				*	.6	0																					0.
Tecoma	Humboldt Desert																T.					T.											T
Tonopah	Walker				Т.																												0.
Wells.	Walker Humboldt Little Hum-																																0.
Willow Point	Little Hum-															T.														T.			T
	boldt.	1	1	1						1	1			1		1		. ~	3	1		01				1				04	T.	T	0.
Winnemueca	Humboldt			1.0	.00											. 06	. 06	1 .00				.01	1				1000			. 00	8.		1

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

‡ Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3. - Maximum and minimum temperatures for December, 1912. District No. 10, Great Basin.

														1	Nevad	a.												
Date.	Bui		Bar	ttle itain.	Che	erry ek.	EI	ko.	Eur	eka.	Fal	lon.	Gard		Jes	an.	Mil	ett.	Qui Riv Ran	rer	Rei	no.	Teco	ma.	Tono	pah.	Wir	oca.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5			62 58 55 58 48	10 8 10 22 10	33 40 46 44 28	6 16 16 23 12	38 40 45 43 38	4 5 14 20 7	35 42 53 43 32	12 14 15 16 12	45 47 51 52 36	8 12 13 15 9	50 46 60 57 37	12 15 15 18 18	55 56 53 50 54	30 32 30 28 28	40 44 50 35 30	10 15 11 10 12	43 40 43 37 37	8 5 12 14 15	50 46 60 39 37	15 20 19 22 16	63 64 60 61 60	4 5 9 11 3	35 36 46 34 25	22 24 25 17 15	41 44 52 34 35	11 12 21 20 8
8 9			46 44 40 52 54	10 2 2 2 2 5	30 37 40 39 42	5 13 18 13 13	35 36 45 40 42	2 4 5 5 4	31 39 44 43 44	9 10 11 16 11	39 40 44 47 48	7 7 8 7 9	43 44 44 48 47	6 9 9 8 10	53 52 51 52 55	27 30 32 34 28	38 46 46 43 45	10 14 10 8 8	42 49 56 43 46	2 4 7 6 4	43 46 47 49 45	12 15 15 16 17	59 55 57 54 52	2 6 10 4 7	31 35 35 36 38	12 18 22 27 26	39 42 47 46 47	4 8 22 11 9
12 13 14	000000		54 60 58 55 58	15 18 28 25 25	49 52 53 48 35	18 22 23 32 28	48 51 53 50 43	11 26 15 31 26	50 51 51 52 38	20 24 25 26 24	48 51 57 57 46	11 15 12 32 30	49 48 61	14 14 18	57 54 54 54 55	26 23 20 28 25	45 50 50 50 42	10 15 14 15 24			50 51 57 58 39	21 22 23 36 29	51 53 51 50 50	6 10 9 5 6	43 45 44 • 41 32	31 34 31 27 22	49 54 57 52 46	16 22 19 30 29
17 18 19			54 56 55 58 44	30 25 28 15 10	32 39 48 28 26	25 27 27 18 - 2	37 38 48 40 24	26 21 27 20 0	37 37 50 39 29	15 26 20 17 - 1	53 58 57 54 41	38 39 20 21 7	58 61 54 50	23 19 18 17	56 56 58 60 60	24 23 24 23 19	45 50 55 49 33	25 35 18 10 1	42 45 42 29	33 20 27 3	47 55 56 42 40	36 31 21 25 17	50 51 48 49 45	5 9 4 1 - 4	39 45 45 37 27	22 30 31 22 15	44 44 53 38 33	29 31 25 17 10
2.00			44 42 46 54 62	8 0 0 5 20	24 26 41 42 35	$-{6\atop -6\atop 4\atop 22\atop 17}$	27 28 32 38 30	- 4 - 4 1 6 17	23 30 45 49 39	-9 -4 13 9	34 35 44 53 45	10 3 4 5 9	41 36 46 55 44	15 6 7 17 11	65 67 68 61 62	19 15 12 11 12	30 37 38 52 43	- 5 - 4 - 3 2 5	34 32 34 32 37	12 2 0 2 13	34 40 50 48 36	18 12 12 23 15	45 48 45 45 42	40 - 5 - 6 - 7 - 2	24 28 39 46 26	12 10 21 25 14	32 33 38 38 38	10 5 6 14 10
27 28 29			48 50 48 52 50 54	0 1 2 15 25 30	29 44 38 37 40 47	$ \begin{array}{r} -3 \\ 5 \\ 30 \\ 16 \\ 32 \\ 20 \end{array} $	31 30 37 37 41 46	- 2 - 3 13 16 28 21	36 45 38 39 41 51	- 3 8 16 9 25 22	37 45 45 47 53 48	2 1 12 19 34 31	37 51 46 55	6 3 20 26	62 58 60 57 59 61	11 11 10 4 26 32	35 41 44 48 50 55	6 4 9 9 15 36	38 39 40 48 46 46	2 3 8 23 29 29	43 55 44 50 48 47	11 10 23 30 28 34	45 47 45 44 45 45	-11 -11 - 9 -10 5 1	31 39 36 39 46 53	14 26 23 27 31 30	38 48 42 45 45 48	6 7 14 23 34 31

		Wyo	ming.													U	ah.									
Date.	Bor	der.	Evai	aston.		ton, tho.	Cori	inne.	Filh	nore.		nment		dow- lle.	Mod	lena.	Oak	City.	Og	den.	Parc	wan.	Pro	ovo.		Lake ty.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	31 32 32 31 25	4 0 22 21 0	31 32 34 32 25	7 5 6 4 6	36 40 40 37 32	14 13 26 25 11	40 37 32 36 30	17 17 17 20 20	45 46 49 39 37	18 25 23 25 19	44 38 39 43 27	8 20 14 17 11	35 38 42 54 27	17 12 20 19 9	41 40 47 36 31	16 22 17 21 16	38 43 43 43 31	20 27 20 23 12	42 44 44 43 35	18 19 17 10 10	39 40 47 34 32	18 25 19 22 13	38 45 43 45 34	16 23 19 21 7	37 42 44 43 32	26 29 29 26 23
6 7 8 9 10	29 29 35 34 31	0 0 - 1 4 5	22 24 27 23 24	2 4 6 6 7	36 36 41 42 40	7 9 8 11 13	37 33 30 42 37	15 17 15 12 15	46 39 40 46 47	7 10 10 17 19	28 31 36 41 40	4 13 9 14 17	31 32 35 32 37	14 15 14 12 21	31 37 42 40 42	13 9 14 18 12	31 34 48 43 41	12 11 12 18 18	36 35 41 45 43	10 13 17 12 15	31 35 40 37 40	10 9 21 11 15	32 32 35 44 41	4 6 7 15 16	32 33 37 42 38	18 18 20 26 25
11 12 13 14 15	37 39 40 39 39	9 10 13 18 4	30 23 22 22 22 25	10 10 - 2 -11 6	40 43 48 51 46	10 17 15 26 18	38 36 30 33 35	13 15 17 17 20	51 46 61 57 50	19 20 33 27 25	40 42 48 50 40	20 20 27 32 28	40 38 42 48 49	18 20 20 24 14	48 50 53 49 42	12 14 16 17 19	44 47 53 53 50	18 18 21 21 25	47 47 51 52 42	17 21 24 24 24	48 48 53 49 45	25 20 21 20 22	42 47 51 51 51	14 18 19 23 22	42 46 47 51 44	25 29 28 36 32
16 17 18 19 20	39 28 34 32 18	19 15 6 10 - 2	23 24 21 24 12	- 4 4 2 8	33 36 37 35 22	25 23 17 14 - 1	40 37 33 32 32	17 15 12 13 18	45 42 52 40 34	22 26 26 23 12	34 34 40 42 25	13 23 23 23 23 2	33 30 38 34 25	23 16 12 12 2	45 47 50 40 28	12 15 13 12 9	40 38 49 42 30	19 25 23 20 8	34 38 41 34 32	20 19 20 4 7	42 41 49 43 32	15 24 22 19 13	33 36 43 36 28	24 16 11 16 8	35 36 44 35 30	29 28 30 27 18
21 22 23 24 25	16 10 25 24 26	0 -15 0 - 8 -10	28 23 15 17 13	23 8 2 - 5 - 8	28 24 22 30 31	7 1 - 3 8 11	34 36 32 30 28	12 4 1 - 1 - 2	29 33 40 53 42	16 6 9 18 25	24 34 32 39 32	10 0 5 15 16	25 23 27 33 26	- 1 1 15 16	26 30 38 50 33	10 4 2 16 14	29 28 32 48 41	13 4 8 14 18	28 30 35 34 34	3 5 15 16 7	24 29 41 49 39	13 8 6 15 18	32 25 27 37 30	3 - 6 - 4 3 18	31 27 30 35 30	20 12 13 22 21
26	22 19 25 24 33 36	- 6 - 9 - 5 11 20 - 2	12 29 32 28 18 26	- 1 0 20 14 4 5	25 24 33 29 39 33	- 1 1 15 26 9	30 29 32 29 32 35	2 3 1 4 6 2	35 41 35 46 49 52	4 6 8 9 17 20	26 29 32 34 49 47	0 5 8 9 26 16	25 24 33 37 35 34	5 5 4 14 14 12	33 41 36 44 50 46	7 1 9 8 17 13	28 32 37 41 41 52	6 5 9 28 28 20	35 34 33 41 39 40	16 11 13 26 19 20	35 46 38 39 42 53	0 7 13 11 25 21	28 30 31 30 41 43	- 4 2 0 23 9	31 32 35 39 48 43	16 13 18 19 29 26
Mns	29.4	4.3	23.8	4.3	35.1	12.1	33.8	11.4	36.7	17.5	36.8	14.3	34.9	13.1	40.8	12.8	40.3	16.9	39.0	15.2	40.5	16.2	37.5	11.3	37.8	23.6

•, •, •, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning, the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

December was a cool, dry month. Like last December, there was a marked deficiency in precipitation, due chiefly to the dry period of the first decade and the absence of rain between the 18th and the 28th, except along the northern coast. The most important climatic feature of the month was the prevalence of high winds in the San Joaquin Valley and in the counties south of the Sierra Madre. Santa Ana winds prevailed December

7 and 8; also December 25 and 26.

In view of the severe loss to the citrus fruit crop of California during the last week in December, 1912, on account of high winds, and the first week of January, 1913, on account of severe cold, it may not be out of place to state here that according to conservative and reliable estimates the crop in the southern citrus belt for the season 1912-13 would be 36,000 car loads of oranges and 8,000 carloads of lemons. When these estimates were made there had been practically no damage from frost, although there had been some damage by the north winds. In addition to the above figures for southern California, there should be added the output from counties north of the Tehachapi, which would bring the grand total for the State to 48,000 carloads.

The wind storm of December 25-26, which occurred after the above estimates were made, was the worst in many years. The Southern Pacific Railroad was forced to abandon its schedule between San Bernardino and Los Angeles on Christmas Day, because of sand drifts on the main line for a distance of nearly 3 miles at Declez. On the Salt Lake line there was much delay and a large force of men were required to clear the track. Overland train No. 2, leaving Los Angeles at 8 o'clock, arrived at Riverside in 6½ hours, although the usual running time is 2½ hours. There was much suffering on the train and it was necessary for mothers to lay dampened handkerchiefs over the faces of their children as a protection from the sand. It is said that the wind was comparatively light at Ontario, but was high a short distance east. There are no accurate records of the velocity of the wind in this section, but it is evident that there was a strong air current through the Cajon Pass and that the surface wind carrying much sand was sufficiently strong to rock railroad cars on the track. Between Wineville and Tedley the velocity of the wind was estimated to be 60 miles an hour.

The above statements relative to weather conditions in December are of importance as showing that considerable damage must have occurred previous to the low temperatures which occurred at the end of December and the beginning of January. Heavy frosts occurred throughout the northern counties of the State December 22, 23, 24, 25, 26, 27, 28; and in the southern counties December 30 and 31. Ample warnings were issued and promptly distributed.

TEMPERATURE.

The temperature for the State was 2° below the normal. The following table gives the mean temperature for each December during the time for which records have

Years.	Mean.	Depart- ure.	Years.	Mean.	Depart- ure.
	°F.	° F.		• F.	* F.
1897	44.4	-2.3	1905	45.3	-1.
1898	44.4	-2.3	1906	47.3	. +0.
1899	45.8	-0.9	1907	48.3	+1.
1900	47.3	+0.6	1908	43.2	-3.
1901	47.4	+0.7	1909	43.3	-3.
1902	46.6	-0.1	1910	47.8	+1.
1903	48.0	+1.3	1911	43.3	-3.
004	47.2	+0.5	1912	44.7	-2.1

The highest temperature reported at any station was 89° at King City on the 7th. This was 2° cooler than the highest temperature recorded during December, 1911. The lowest temperature was -6° at Tamarack on the 6th. This was 20° warmer than the lowest temperature recorded during December, 1911, at the same place.

PRECIPITATION.

The average precipitation for California for December with departures from the normal is as follows:

Years.	Mean.	Depar- ture.	Years.	Mean.	Depar- ture.
	Inches.	Inches.		Inches.	Inches.
1897	1.75	-1.28	1905	1.55	-1.4
1898	1.20	-1.83	1906	8. 42	+5.39
1899	3.03	.00	1907	5. 41	+2.3
1900	1.68	-1.35	1908	. 2.33	70
1901	1.45	-1.58	1909	6. 92	+3.8
1902	2.96	07	1910	1.87	-1.46
1903	1.44	59	1911	2.05	90
1904	3.04	+ .01	1912	1.58	-2.4

The greatest monthly precipitation was 15.59 inches, at Weitchpec. Forty stations reported no rain during the month.

SNOWFALL IN THE MOUNTAINS.

December, 1912, was a month of light snowfall in the mountains of California. In many ways it resembled December, 1911, as the snow cover was not extensive nor deep. The run-off during the month was exceptionally light, and at nearly all points streams were very low. While the water supply has not been abundant, there

has been no special hardship due to scarcity. The following table gives the depth of snow on the ground at Summit, Placer County, Cal.:

Years.	Dec. 1.	Dec. 15.	Dec. 31.
100	Inches.	Inches.	Inches.
908	24	32	2
910,	7	24	4
911	T 1	14	1

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Stations.	Hours.	Percent- age of possible.	Stations.	Hours.	Percent- age of possible.
Eureka	75	26	Sacramento	215	73
Fresno	230	77		268	86
Los Angeles	276	90	San Francisco	192	65
Mount Tamalpais	196	66	San Jose	225	75
Red Bluff	174	60	San Luis Obispo	258	85

There was more sunshine during the current December than during the same month last year.

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS FOR DECEMBER, 1912.

By N. R. TAYLOR, Local Forecaster.

Sacramento watershed.—The rivers of this watershed were much below the stages usually maintained during December and were even lower than during the preceding month. In some of the reaches of the Sacramento River stages 1 foot lower than those of November were reported.

There was a marked deficiency in rainfall over all sections of the Sacramento Valley, especially in the lower portion, where the rainfall was the lightest on record for December. Rain, mostly light, was general from about the 10th to the 15th and during this period from 15 to 20 inches of snow accumulated in the high ranges of the Sierra Nevada, but the prevailing low temperatures retarded the melting of snow and likewise reduced the run-off of all mountain streams. The greatest rise in any stream during the month was 4.6 feet at Red Bluff during the 24 hours ending at 7 a. m. of the 15th, but this flattened out as it moved downstream and resulted only in a slight swell in the lower reaches of the river.

There was a scarcity of water for mining purposes dur-

ing the entire month.

Lower San Joaquin watershed .- The rivers of this watershed remained at extreme low stages during the month. The San Joaquin River itself was, with one exception, the lowest of which there is a record for December. Precipitation throughout the drainage basin was light and there was no appreciable increase in the run-off of any of the mountain streams as a result of melting snow.

NOTES ON THE RIVERS OF THE UPPER SAN JOAQUIN WATER-SHED.

By W. E. BONNETT, Local Forecaster.

During the month of December there was but one general rain in the watershed of the upper San Joaquin and it was not in sufficient amount to cause any rise in the streams. The stages were very low and uniform throughout the month with ranges at the various stations of but

one or two tenths of a foot.

In many ways the weather of December was like that of the same month last year but the abnormalities were more pronounced. Fewer days with fog were recorded than ever before, the percentage of humidity was the lowest and the number of clear days the greatest of record. These conditions were brought about by the scarcity of rain and resulted in a great daily range of temperature, the day temperatures being somewhat higher than normal and the night temperatures very much lower. There was an unusual succession of heavy to killing frosts with the temperature at the ground 25° or below on 15 days of the month.

OCEAN TEMPERATURES ON CALIFORNIA COAST.

By George F. McEwen.

[Summary by author of a paper prepared for the University of California, Department of Zoology.¹]

The presence along the west coast of North America of a belt of cold surface water having at any point a much lower temperature than is normal for the corresponding latitude has long been known. And several papers have been written in which a diversity of merely qualitative explanations of this interesting and perplexing phenome-non have been given. The present paper is an attempt to explain quantitatively the temperature distribution by means of a new theory of oceanic circulation, developed by V. W. Ekman, of Kristiana.

The contents of this paper fall under the following nine

I. A brief summary of some important and generally accepted facts concerning oceanic temperatures and circulation.

II. A brief review of the theories that have been proposed to account for the cold-water belt along the west

coast of North America.

III. An abstract of the most important part of Ekman's theory of oceanic circulation needed in attacking the above-mentioned problems.

IV. Some general qualitative applications of his theory.

to a variety of temperature problems.

V. The formulation of a temperature problem in such a way that a quantitative estimate of the mean monthly surface-water temperature for any given place can be made by means of the physical theory of heat and circulation.

VI. The solution of the above problem for four very different regions along the Pacific coast, and a comparison

of the observed and calculated values.

VII. A discussion of the results, and additional test of the theory using the observations made by the Marine Biological Association of San Diego in a much more limited area.

VIII. Some remarks on the influence of ocean temperatures on the coast climate of California.

IX. Summary and conclusion.

IX. SUMMARY AND CONCLUSIONS.

Numerous observations extending over a long period have established the presence of abnormally cold surface water contiguous to the west coast of North America,

¹ McEwen, Geo. F., The Distribution of Ocean Temperatures Along the West Coast of North America Deduced from Ekman's Theory of the Upwelling of Cold Water from the Adjacent Ocean Depths. Internationale Revue der gesamten Hydrobiologie und Hydrographie, 1912, Band V, Heft 2 und 3, pp. 243–286, 21 text figures, 4 tables.

but a diversity of conflicting theories have been proposed by various writers to account for the phenomenon.

The conclusions reached by different investigators may be summarized as follows:

1. A cold Arctic current flows south along the coast from the polar regions.

2. The Japan current, because of its passage through high latitudes, becomes cooled, and as it flows south along the coast of the United States appears as a cold stream because its temperature corresponds to the normal value prevailing in higher latitudes.

3. The accumulation of water in the south polar region causes an excess of pressure which drives the cold bottom water northward with an increasing velocity owing to the diminishing distance across the Pacific, till when it reaches the latitude of Sitka, Alaska, owing to the deflecting force due to the earth's rotation, it is driven up the continental slope and flows south as a cold current, since it has no other outlet.

4. The coldest water is located about 800 miles south of Sitka in the summer time, and areas of alternately warm and cold water are distributed in an irregular manner all along the coast. But from each of the previous theories, owing to the continual increase in the heating effect of the sun toward the south, a continuous rise in temperature would accompany a decrease of latitude. Therefore the low temperature must result from an upwelling of cold bottom water from the adjacent ocean depths. A general eastward drift of the ocean water extending to the bottom is assumed to result from the continued action of the winds; consequently the cold bottom water is driven up the continental slope, most of it reaching the surface at Cape Mendocino (the coldest region). The irregularities in temperature distribution are due to the effects of submarine valleys and differences in the slope of the ocean bottom.

The above theories were based on hypothetical causes, which in some cases were not verified except by the general qualitative agreement of the deductions with the particular observations considered, and the theory of oceanic circulation proposed in 1878 by Zöppritz was widely used. No attempt was made to explain the seasonal fluctuation.

Before going on with the conclusions regarding the Pacific coast region it will be necessary to consider general theories of oceanic circulation. A recent one due to Ekman differs from that of Zöppritz in that no assumption as to regular flow in plane layers is used as a basis, but a virtual value of the coefficient of viscosity, allowing for the actual turbulent motion of the water is used, and the deflecting force due to the earth's rotation is also introduced. Many results of Zöppritz's theory are inconsistent with observations, while those of Ekman's theory are in harmony with experience. Most of the results of the two theories are entirely different.

From Ekman's theory it follows that there must be an upwelling of the cold bottom water along most of the coast of North America owing to the action of the observed winds, and in the present paper, assuming the low temperature to be due entirely to cold bottom water

upwelling and mixing with the surface water, a theoretical formula was derived by which the abnormally low temperatures of any region could be computed for each month of the year. A very satisfactory agreement with observations was obtained, though the temperature reduction below the normal varied from 0° to 8° C.

The following table showing the data used and the results obtained, for a belt of water extending west from San Francisco, indicates the agreement between the theoretical and observed temperatures. The formula derived for this region is $T=(1-0.030\,V_w)t_2+0.030\,V_wt_1$, in which

T is the surface temperature of the in-shore water, t₂ is the normal surface temperature for the latitude, t₁ equals 8°, the mean temperature of the upwelling water (centigrade), and

V_w is the component of the average wind velocity in miles per hour parellel to the coast line over an area whose center is about 400 kilometers from the coast. All of the variable quantities correspond to the same month.

Month.	Vw.	tg.	Calculated T.	Observed T.	Differ- ences.
		°C.	°C.	°C.	°C.
1	7.70	14.20	12.80	12.50	0.30
2	6.87	13.80	12.60	11.60	1.00
3	9.25	12.60	11.30	11.50	-0.20
2 3 4 5	11.40	12.00	10.60	11.30	-0.70
	12.50	14.50	12.10	11.30	0.80
6	14.40	15.20	12.10	13.80	-1.70
7	17.50	20.00	13.70	13.50	0.20
7 8 9	18.60	19.90	13.25	13.00	0.25
	17.60	19.90	13.60	13.80	-0.20
10	13.60	18.10	14.30	14.60	-0.30
11	8.80	16.60	14.30	13.90	0.50
12	6.65	15.20	13.80	13.40	0.40

In general the theory shows that the area affected and the magnitude of the temperature reduction and its distribution vary with the depth of the water, the slope of the bottom, the velocity of the winds, the portion of the surface over which they extend, and their steadiness.

To give an idea of the peculiarities of temperature distribution that have been accounted for by means of these principles the following results of observation are enumerated.

The cooling effect of the upwelling water extends to a distance of 600 kilometers from the coast off Cape Mendocino, latitude 40°, and increases to a distance of 2,100 kilometers from the shore off San Diego, latitude 32° 45′.

The temperature reduction in the summer is a minimum off San Diego and a maximum off Cape Mendocino where the coldest surface water is found.

Temperatures as low as 14° C. in August have been found in certain limited areas near the coast south of latitude 35°, while the value 18° C. prevailed in the surrounding water a few miles away, both north and south. Considering the complexity of the phenomena, the

Considering the complexity of the phenomena, the agreement between the theory and the observations has been very satisfactory, and judging from the results already obtained it would be profitable to carry on a more detailed and quantitative investigation following the lines suggested in the present paper.

Table 1.—Climatological data for December, 1912. District No. 11, California.

			years	Tem	perature	e, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	ainy or m	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	vind n.	Observers.
Oregon.					-															
Klamath Agency Klamath Falls	Klamathdo.	4,169	23	30. 8 30. 6	- 1.8	48	2† 3†	- 3 7	26 26	38	3. 40 2. 62	+ 0.80	0.80	26. 0 18. 0	10 12	18 16	5 2	8	w. nw.	Edson C. Watson. W. H. Heileman.
Klamath Falls Lakeview Merrill	Lake	4,825	29	29. 3	- 0.7	47	11†	7	20	31	0.89	- 1.31	0. 27	4.3	8	9	3	19	S.	Ralph E. Koozer.
Yonna	do	4,146	5	29. 4	******		8	- 1	26	46	1.52		0.40	4.2	7	2	18	11	SW.	Mrs. Agnez Ritchson. Jacob Ruecke.
California.																				
Alameda	Alameda	4,460	8	30. 4		55	12	4	6	42	0.58	******	0. 26	2.0	9	12	13	6	sw.	Chas. E. Sears. Prof. C. B. Towle.
Angiola	Tulare Contra Costa	208 46	12 33	45. 5	+ 2.4 + 5.1	66	9†	23	27 30	41	0.40	- 0.39 - 2.12	0.40	0	1	27 26	0	5	n.	Santa Fe Co. Southern Pacific Co.
Antioch **	Santa Cruz	102	27	46.7	- 3.0	62	1	26 28 36 30 45 31 35	27 14		0.75	- 3.61	0.65	0	2	25	1	5	nw.	Do.
Arrowhead Springs	San Bernardino Placer	$\frac{2,000}{1,360}$	3 41	53.0	- 0.2	73 61	17 9†	36	14	31 26	0.00	- 4.71	0.00	0	5	30 20	0	10		Dr. E. A. Crokat.
Avalon	Los Angeles	30	2	55. 8		75 83	18	45	24	24	T.	- 4.71	T.	0	0	30	1	0	e. n.	Southern Pacific Co. T. S. Manning.
Azusa,	do	540	10	54.8	+ 0.9	83	18	31	25 21t	45	0.00	- 1.41	0.00	0	0	28	2	1	SW.	A. P. Griffith.
BagdadBakersfield	San Bernardino	784 404	23	47.2	- 0.3	68 85	3† 10	23	217	27 54	0.00		0.00	0	0					Santa Fe Co. Do.
Barstow	San Bernardino	2,105	9											*****						E. L. White.
Berkeley Biggs **	Alameda Butte	317 98	25 13	47. 2	+ 1.7	63	7 7†	35 20	27 27	21	1. 62 0. 43	- 2.44 - 2.77	0.70	0	6 2	15 20	8	8 5	s. n.	State University. Southern Pacific Co.
Bishop	Inyo	4,450	17	35. 1b	- 3.8	67	31	6 5	26	55	0.00	- 0.42	0.00	0	0					Paul E. Lodge.
Bishop Creek	Humboldt	8,500 1,700	6	29.6 42.8		51 72	7	5 26	22	35	0. 38 9. 67		0.38 1.55	3. 8 T.	15	10	2	19	8.	Do. Victor Hope.
Blue Canon	Placer	4,695	13	44.0	+ 3.8	67	18	19	4	38	4. 35	- 5.68	1. 35	25. 0	6	13	11	7	n.	Southern Pacific Co.
Blythe	Riverside	268 2,000	12	45.7		74 73	8	11 26	25 5†	53	0. 20	+ 1.08	0. 20 3. 43	0	17	18 14	10 7	10	n.	D. H. Carey.
Branscomb	Imperial	- 105	3	40 00		77	1	25	24		0. 10	+ 1.08	0. 10	0	1	29	2	0	n.	A. J. Hann. M. D. Witter.
urney	Shasta	3,300	2	33. 1		55	7	25 10	27	37	2.47		1.04	T.	6	12	2 3	17	n.	Mrs. M. D. Chambers.
ahuillaalexico	Riverside	3,600	1 7	41.8 51.0		70 70	17 3†	15 28	28	42	T. 0.00		T. 0.00	0	0	24 29	0	2	e. nw.	Carl Stevens. J. E. Peck.
aliente **	Kern	1,290	36	46. 6	- 3.1	62	12	39	41		0.00	- 1.95	0.00	0	0	30	0	1	e.	Southern Pacific Co.
alistogaampbell	Napa	363 217	40 15	47.5	- 3. 1 - 1. 7 - 0. 2	70 67	5†	30	21 27	38	2. 35 0. 40	- 4. 10 - 1. 44	1. 45 0. 27	0	5	19 18	0	12	n.	Do.
amptonville (near)	Santa Clara Yuba	3,500	5	42.9	- 0.2	70	8† 2 3†	24	25	40	5. 99		2. 10	9.0	8	15	7 5	11	nw.	F. M. Righter. Cal. Gas & Electric Co
edarville	Modoc	4,675	18	30. 9	+ 0.5	52	3†	10	25 22 24 22	34	1.39	- 0.22	0. 21	6.3	11	12	19	0	SW.	T. H. Johnstone.
hicghina Flat	Butte Humboldt	189 600	42	43. 0	- 1.8	72 58	8	24	24	36 26	1. 02 9. 57	- 3.12	0.55 2.60	0	17	17	3 2	11 18	n. w.	C. H. Stephenson. O. I. Westerburg.
hino **isco **	San Bernardino	714	20	52.6	+ 0.4	58 78	1+	28	194		0.00	- 1.90	0.00	0	0	31	0	0		Southern Pacific Co.
laremont	Placer Los Angeles	5,939 1,200	20	30. 8 51. 6	+ 3.4	58 74	12	39 30 24 24 10 22 24 28 22 30	24	42	2. 80 0. 10	- 5.94 - 1.78	1, 40	28.0	6	20 26	5	11	n.	Prof. F. P. Brackett.
loverdale	Sonoma	340	10	48. 1	+ 0.1	76c	8	17	1 9	42	3.48	- 2.03	1. 20	0	9	19	1	11	n.	John O. Ogle.
oalingaolfax	Fresno	2,421	41	48. 4 42. 6	- 4.0	70	11	29° 25	25	37 35	0.00 3.21	- 5. 19	0.00	0	7	25 21	3	10	s. n.	Union Oil Co. Southern Pacific Co.
olusa	Colusa	60	9	46. 1		71	8	24	27	28	0.44	- 2.69	0. 29	0	2	25	1	5	n.	C. D. McComish.
orning **uyamaca	Tehama	277	26	50.0	+ 2.7	70 57	1†	31 21	25	24	0.86	- 2.72 - 5.00	0.32	0	4	18	6	7	n.	Southern Pacific Co.
avisville	San Diego Yolo	4,677 51	13	38. 3	- 0.3	34	30†	21	13	34	0.07	- 5.00	0.07	0	1	23	5	3	e.	L. L. Macquarie. S. H. Brackett.
eer Creek	Nevada	3,700	5	35. 8		60	7	17	25	32	5.06		1.87	15. 0	6	16	6	9	S.	Cal. Gas & Electric Co
el Monte	Monterey	25 1, 138	27	50. 0 52. 6	+ 7.6	68 80	3	29 30	26		0. 46 5. 62	- 4.31	2, 20	0	6	23 20	2 2	6 9	n. n.	H. R. Warner. Southern Pacific Co.
enair	Stanislaus	126	12	42.3	- 3.3	64	14	19	27	37	T.	- 1.27	T.	0	0	26	0	5	nw.	Santa Fe Co.
e Sabla obbins (near)	Butte Yuba	2,500 $1,650$	8	42. 2 48. 6			8 7†	23 32	25	40 38	5. 38 3. 74			0	6	12 10	12 15	6	n.	Cal. Gas & Electric Co
ownieville	Sierra	3, 150	1	38. 4		61	8	18	27	31	4. 74			5.0	10	16	5	10	s. n.	Do. J. T. Mason.
udleys	Kings	595 3,000		48. 4 38. 5			4† 13	24 18	26		0.00			0	0	21	7	8	n.	Union Oil Co.
unlap (near)	Fresno	2,800	3	39. 4		66	14	19	4	38	0.45		1.34	3. 0 T.	6	21 19	í	3	n.	W. H. Dudley. U. S. Forest Service.
unnigan **	Y 010	65	35	51.8	+ 4.5	66	8	31	24		0.34	- 3.27	0, 20	0	3	23	0	8	n.	Southern Pacific Co.
unsmuir **	Siskiyou Butte	2,285 160	23	45. 3	- 1.2 + 0.6	64	8 7	23 22	27 24	34	5. 16 1. 88	- 4.56 - 1.71	1,90	4.0	11 6	18 18	0 5	13	n. n.	R. W. Durham.
l Cajon	San Diego	482	13	51.4	- 2.7	85	18	24	231	49	0.05	- 1.23	0.05	0	1	29	1	1	W.	H. H. Kessier.
lectralsinore	Amador	$\frac{725}{1,234}$	17	45. 0		64	14†	26	27	36	2. 07		1. 32	0	5	29	2	0		. Cal. Gas & Electric Co A. F. Schult.
mmigrant Gap	Placer	5,230	38	36. 6	- 0.3	53	3	20	25	25	2. 45	- 6.33	1.30	24.5	3	20	8	3		. Southern Pacific Co.
scondido	San Diego Humboldt	657 64	18 26	48.5	- 0.3 - 2.2 - 1.4 - 3.6 - 1.6	78 63	18	23	28 21	21	0.02	- 1.33	0.02	0	18	7	23	1	W.	A. R. Moon. U. S. Weather Bureau
ureka armington **	San Joaquin	111	33	43. 4	- 3.6	66	8	23 33 20 27 12	26	21	5. 83 0. 85	- 1.81	0. 78	0	18	27	5 2	16 2	se. nw.	Southern Pacific Co.
olsom	Sacramento	252	40	45. 4	- 1.6	64	13	27	26 28 27	27	0.91	- 3.12	0.67	0	4	21	2	8	ne.	F. O. Hutton.
ordyce Damort-Bidwell	Nevada	6,500 $4,735$	17 23	26. 2	- 6.6	48	11 3	12	71	32	1.55	- 5.01 - 1.77	1.55	45. 0 2. 5	10	11 10	14	17	ne. w.	E. E. Roening. E. O. Franklin.
outs Springs	Colusa	1,650	23	41.8		68	6	19	27	38	0.70		0.40	0	2					. A. J. Burgi.
resnoalt **	Fresno Sacramento	293 49	25	40.0	-1.3 + 4.5	66	14 14	27 29 29 24 25 22 28 28 28 21	27 27 27 27 27	32	0.35	- 1. 15 - 2. 87	0.35	0	1	22 23	2	6	e.	U. S. Weather Bureau Southern Pacific Co.
eorgetown	El Dorado	2,650	39	44.2m	- 4.3	62	2†	29	27	30	3.72	- 5.38	1.95	0	4					. H. D. Jerrett.
lroy **	Santa Clara Siskiyou	193 3,300	38	48.4	+ 0.4	70 76	8	24	261	90	0.51	- 2.62	0.47	99.5	3	16	2 9	13	se.	Southern Pacific Co.
lennville	Kern	3,300	2	39. 0		63	18	22	25	36	9. 22 0. 58		1.55	22.5 T.	17	11 16	11	11 4		A. Dannenbrink. C. H. Likely.
old Runonzales **	Placer	3.222	13	43.6	- 2.8 + 1.1	66	8	28	25	27	3.60	- 3.20	1.20	8.0	7	19	4	8	n.	Southern Pacific Co.
rass Valley	Monterey Nevada	$\frac{127}{2,690}$	13	43. 0	+ 1.1	66	9† 7 6	28	13	28	4.28	- 1.15 - 4.11	0. 27	0	6	23 17	5 9	3 5	sw.	F. R. Hull.
rass Valleyreenland Ranch	Invo	- 178	1	48.8		82	6	21	29	45	0,00		0,00	0	0	25	0	6		. J. W. Corkhill.
reenville	Plumas Tuolumne	3,600 2,828	18	35. 0	+ 0.7	58 61	7† 8	8	27 24	38	2.88 1.48	- 3.65	1. 83	8.0	6 3	15 23	5 5	11 3	SW.	C. H. Higbie. H. S. Richardson.
uinda **	Yolo	350	14	46.9	+ 2.7	68	13	22 22	31		0.95	- 2.20	0.55	0	3	21	7	3	n.	Southern Pacific Co.
andford	Kings	249	12	43. 2	- 2.4 + 0.7	67	14	20	26	37	0.21	- 0.73	0.21	0	1	0	27	4		. Santa Fe Co.
ealdsburgearst	Sonoma. Mendocino	1,800	19	47.7	+ 0.7	70	.7	27	24	37	2. 83	- 4.20	1.38	0	7	19	0	12	n.	F. J. Kinley. H. D. Ellmaker.
[eber	Imperial	- 20	6	49.8		72	3†	24 14	25	42	0.02		0.02	0	1	19	11	1	n.	C. J. Booth.
etch Hetchy	Tuolumne	3,665 284	38	34. 8 45. 8		65	7	14	27 27	40 38	1. 17 0. 42	- 1.55	0.83	2.0	3	25 17	10	5 4		E. W. Brown. J. N. Thompson.
ollisterornbrook **	Siskiyou	2, 154	24	36. 1	- 4.3 - 1.7	52	8 17	23 13	22		0. 16	- 2.60	0. 10	0	3	15	3	13	n.	Southern Pacific Co.
or Springs	Tulare	3,300	5	39. 6		59	14	25	51	25	0.70		0.70	0	1	23	7	1		. U. S. Forest Service.
ullvilleyllwild	Lake Riverside	2,250 5,250	5	43. 6		84	7	24	25	40	8.00		2.06	0. 5	15	3	15	13	sw.	T. H. Betterton. Earl Powers.
	Inyo	wy word		36.7		68	31	12				- 2.00				24		1		

Table 1.—Climatological data for December, 1912. District No. 11—Continued.

Stations. Courties		4		years	Tem	perature	, in c	legre	es Fah	renh	eit.	Prec	ipitation	, in in	ches.	days,		Sky.		direc-	
Calgorial -Continuod. Stations.	Counties.		Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		9	Total.	Departure from the normal.	_	Total snowfall, unmelted.	Number of rainy 0.01 inch or mo	Number of clear days.	Number of part- ly cloudy days.	cloudy days.	7	Observers.	
amentown. Touloumen. 4,70 9 62 2 65 14 24 25 25 166 1.50	California—Continued.																				-
San Mateo **. San Mateo 22 38 50.5 + 0.9 62 17 34 27 0.82 - 2.56 0.44 0 3 20 2 9 n. Southern Pacific C San Miguel Island San Luis Oblspo 616 25 44.4 - 3.0 65 1 17 27 0.16 - 1.76 0.16 0 1 17 8 6 Do. Santa Barbara Santa Barbara Santa Barbara 371 23 46.7 - 1.2 64 7 26 12† 0.15 - 1.34 0.15 0 1 24 3 4 Southern Pacific C Santa Barbara Santa Barbara Santa Barbara Santa Barbara Santa Barbara Santa Clara Santa Cruz	nskip. loone** lamestown. Kennett. Kentheld. King City. Lake Eleanor La Porte. Le Grand. Lemon Cove. Livermore Lond Valley Livermore Lond Valley Los Angeles. Los Banos** Los Gatos. McCloud Macdoel. Macdoel. Macdoel. Macdoel. Marysville. Mercea Middlewater Mill Creek (1) Milton (near) Moloave. Moloav	Butte Amador. Tuolumne Shasta. Marin. Monterey Tuolumne Plumas. Merced. Tulare. Santa Clara. Alameda. San Joaquin Inyo. Lassen. Los Angeles. Merced. Santa Clara. Siskiyou. do. Lassen. Los Angeles. Merced. Santa Clara. Siskiyou. do. Lassen. Butte. Imperial Kern. Yuba. Riverside. San Mateo Merced. San Diego. San Bernardino. San Diego. Nevada Monterey Kern. Marin. Napa. do. San Bernardino. San Diego. Nevada Madera. Stanislaus. Nevada Madera. Stanislaus. Nevada Madera. Stanislaus. San Diego. Alameda. San Diego. Alameda. San Diego. San Francisco. Marin. Tulare Plumas. Tehama. Shasta San Bernardino. San Bernardino. San Francisco. Marin. Tulare Plumas. Tehama. Shasta San Bernardino. San Diego. San Francisco. Riverside.	4, 975 1, 471 739 65 333 4,700 65 600 4, 209 4, 209 45 45 45 45 47 400 29 3, 410 4, 528 64 173 66 66 67 -158 64 173 67 -158 68 69 2, 751 1, 550 3, 210 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310 2, 375 20 3, 310	34 25 24 12 117 23 18 12 17 23 18 12 17 23 18 12 17 23 18 12 17 23 18 18 12 17 23 18 18 18 18 18 18 18 18 18 18 18 18 18	37.6 442.2 442.8 8 53.0 4 445.2 53.0 4 45.5 53.1 4 6.8 8 4 43.2 8 443.	- 3.7 - 4.3 - 0.7 - 2.0 + 0.1 - 1.5 + 1.2 - 4.1 - 4.1 - 5.1 - 5.1 - 2.4 - 9.0 - 3.4 - 9.0 - 3.4 - 9.0 - 1.6 - 2.1 - 2.1 - 2.0 - 1.6 - 2.1 - 2.1 - 2.1 - 2.1 - 2.1 - 2.1 - 2.1 - 2.1 - 3.4 - 9.0 - 1.6 - 2.1 - 1.6 -	52 70 65 71 62 89 55 65 65 65 65 66 65 66 66 66 67 70 70 70 70 70 70 70 70 70 70 70 70 70	31 14 18 8 8 7 7 7 7 4 4 10 1 8 8 1 2 8 8 8 9 9 1 7 7 3 1 1 4 8 1 2 1 1 5 1 1 7 8 1 1 7 8 1 1 7 8 1 1 7 8 1 1 1 1	18 13 24 26 26 26 26 30 31 125 22 27 27 29 5 35 6 23 30 31 5 25 28 29 29 30 31 25 25 26 23 30 31 5 25 26 23 30 31 5 25 26 23 30 31 5 25 26 23 30 31 5 25 26 23 30 31 5 25 26 23 30 31 5 25 26 26 33 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 26 30 31 5 26 26 30 31 5 26 26 26 30 31 5 26 30 30 31 5 26 30 30 31 5 26 30 30 31 5 26 30 30 30 30 30 30 30 30 30 30 30 30 30	25 23 1 24 25 6 24 1 27 22 25 1 5 7 27 22 25 22 24 25 1 25 1 25 25 22 22 24 25 1 25 25 25 22 22 27 27 27 27 27 27 27 27 27 27 27	26 32 32 32 32 32 32 33 33 33 33 33 33 33 34 34 35 36 37 36	5.79 5.79 6.70 6.85 6.169 6.35 6.060 6.07 6.07 6.080 6.08	- 2.44 - 6.35 - 1.84 - 4.08 - 0.16 - 4.03 - 2.08 - 1.28 - 4.52 - 1.28 - 4.52 - 1.25 - 1.25 - 1.25 - 1.61 - 2.26 - 2.31 - 1.90 - 5.97 - 1.61 - 2.68 - 2.43 - 2.43 - 2.34 - 2.53 - 3.19 - 3.11 - 3.26 - 3.43 - 3.81	2. 26 0. 60 0. 81 1. 30 0. 62 0. 60 0. 62 0. 63 0. 60 0. 62 0. 65 0. 60 0. 62 0. 62 0. 63 0. 64 0. 64 0. 64 0. 64 0. 65 0. 64 0. 64 0. 65 0. 64 0. 64 0. 65 0. 64 0. 64 0. 65 0. 64 0. 65	18.8 8 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 2 2 3 10 6 0 0 3 10 1 1 1 9 4 4 8 5 5 1 1 5 1 1 2 2 1 1 4 4 0 0 1 3 3 3 1 1 1 1 1 0 0 4 4 7 7 7 0 0 1 5 5 3 6 6 3 3 1 1 1 1 1 2 1 5 3 3 6 6 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100 204 100 204 100 204 100 204 100 204 100 205 100 20	10 0 0 11 4 0 4 14 0 1 11 15 	$\begin{array}{c} 111\\ 11\\ 11\\ 11\\ 11\\ 11\\ 11\\ 11\\ 11\\ 1$	nw. n. n. n. see. see. s. w. ne. n. n. s. ne. n. n. s. ne. n. n. s. n. n. n. n. s. n. n. n. n. n. s. n.	Cal. Gas & Electric Co. Southern Pacific Co. O. J. Egleston. Miss M. E. Parsons. Southern Pacific Co. O. J. Todd. Chas. W. Hendel. Santa Fe Co. G. W. Sandidge. The Director. E. G. Still. Ezra Fiske. G. F. Marsh. A. G. Evans. U. S. Weather Bureau. Southern Pacific Co. F. H. McCullagh. F. F. Spencer. Butte Valley Land Co. J. H. Williams. Butte Co. R. R. Co. Southern Pacific Co. Union Oil Co. Southern Pacific Co. E. A. Palmer. Southern Pacific Co. Cal. Gas & Electric Co. J. H. Southwick. Southern Pacific Co. Cal. Gas & Electric Co. J. H. Southwick. Southern Pacific Co. Do. C. E. Prindle. Herbert Lathrop. I. E. Deboy. Southern Pacific Co. John C. Knecht. U. S. Weather Bureau. Alex. Hall. W. H. Martin. Santa Fe Co. T. O. Bailey. S. W. Marsh. Southern Pacific Co. S. W. Marsh. Southern Pacific Co. B. L. Johnson. Chabot Observatory. H. D. Brodie. W. H. Duncan. U. S. Reclamation Servi F. T. Hale. E. D. Fairchild. Western Pacific Co. Southern Pacific Co. Southern Pacific Co. B. L. Johnson. U. S. Reclamation Servi F. T. Hale. D. Fairchild. Western Pacific Co. Southern Pacific Co. E. D. Sorver. Dr. F. W. Sawyer. E. H. Parnell. A. Baring-Gould. John Hyslop. U. S. Weather Bureau. Leslie McAuliff. U. S. Forest Service. U. S. Weather Bureau. W. W. Jones. P. W. Moore. Santa Fe Co. Southern Pacific Co. South
Santa Cruz. Santa Cruz. Santa Cruz. Santa Cruz. Santa Cruz. Sonta Cruz. Santa	San Mateo **	San Mateo San Luis Obispo Santa Barbara Fresno Santa Barbara Santa Clara	22 616 500 371 130 90	38 25 18 23 28	44. 4 46. 7 52. 4 48. 1	- 3.0 - 1.2 - 3.5 - 0.7	62 65 64 79 71	17 1 7 18 8	34 17 26 35 24	27 27 12 22	35	0.82 0.16 0.15 T. 0.61	- 2.56 - 1.76 - 1.34 - 3.33 - 2.36	0. 44 0. 16 0. 15 T. 0. 35	0 0 0 0	1 0 6	20 17 24 29 23	8 3 2 4	9 6 4 0 4	w.	Southern Pacific Co. Do. Capt. W. G. Waters. Southern Pacific Co. G. W. Russell. Santa Clara College.
Santa Maria. Santa Barbara 220 24 Edwin Morris. Santa Monica. Los Angeles. 110 27 52.8 - 3.2 71 18† 36 25 30 T 2.52 T. 0 0 28 3 0 n. N. D. Ingham. Santa Rosa. Sonoma. 181 23 46.6 - 1.6 67 8 24 26 37 1.78 - 3.83 0.63 0 6 15 2 14 s. Southern Pacific C Selma** Fresno. 311 26 44.4 - 0.9 61 16 30 2† 0.34 - 0.95 0.34 0 1 23 0 8 Do.	Santa Cruz Santa Margarita ** Santa Maria	Santa Cruz San Luis Obispo Santa Barbara	996 220	39 23 24 27	47.9	- 4.5 - 5.3	62	3	20	61		0. 20	- 3.89	0.20	0	1			4	n.	Southern Pacific Co. Edwin Morris.

Table 1.—Climatological data for December, 1912. District No. 11—Continued.

			years	Tem	perature	, in c	legre	es Fah	renh	neit.	Pre	cipitation	n, in in	ches.	days,		Sky	:	direc	
Stations.	Countles.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	f rainy	Number of clear days.	Number of part- ly cloudy days.	N umber of	ng wind tion.	Observers.
alifornia—Continued.																				
even Oaks	San Bernardino	5,000	2	39.9		65	18	16	20	41	0.00		0.00	0	0	29	0	2	n.	M. Lewis.
hasta	Shasta	1,048	16	*****	******		****				*****	*******	*****	*****						Dr. T. J. Edgecomb.
ierra Madre	Los Angeles	1,400	15		- 2.4	74	13†	38	24	29	0.15	- 1.76	0.11	0	2 3	24	4	3	W.	Mrs. A. E. Gregory.
ierraville	Sierra	5,000	2	31.7		58	12	6	26	48	1.90	- 4.50	1. 10	6.0		13	8		n.	C. D. Johnson.
isson	Siskiyou	3,555	23	33.2	- 1.5	56	7	12	21	133	0.77	- 5.63	0.35	7.0	3	14	7	10	n.	Southern Pacific Co.
oledad **	Monterey	188	38	54.1	+ 4.8	75	20	30	24†		0.35	- 1.03	0.35	0	1	19	0	12	n.	Do.
onora	Tuolumne	1,825	24	43.4		70	16	25	25	35	1.43	- 4.32	0.75	0	3	16	6	9	W.	Chas. P. Jones.
outheast Farallone	San Francisco	30	9	51.8		58	7	47	19	9	0.88		0.62	0	8	13	5	13	nw.	U. S. Weather Bureau
pringville	Tulare	4,000	5	40.6		64	18	20	15	33	T.		T.	T.	0	24	3	4		D. L. Wishon,
quirrel Inn	San Bernardino	5, 280	2	37.7		56	30	21 22 20	99	23	T.		T.	T.	0	28	2	1	n.	A. D. Frantz.
an wood	Butte	2, 140	8	49.2		58	1	22	22 2 26	34	3.75		1.45	Ť.	5	24	2	5		Cal. Gas & Electric Co.
tirling City	do	3, 525	8	44.1		70	5	20	26	37	5.30		3.05	5.0	3	18	5	8	50.	Butte Co. R. R. Co.
tockton (S. H.)	San Joaquin	23	41		- 3.0	62	13	20	27	34	0.24	- 2.54	0. 15	0.0	3	20	9	2	se.	State Hospital.
	Madera	296	12		- 0.8	70	31	24	6	40	0.00	- 1.37	0. 00	0	0	26	0	5		Santa Fe Co.
torey	Solano	200	32	20. 2	- 0.0	10	91	24	0	-80	0.90	- 2.60	0.50	0		24	3	4	******	Southern Pacific Co.
uisun **			32	44.2				26	27	28				0	5	16	9	6	nw.	
ulphur Banks	Lake	1,350	****	99.2		61	2	20	24	20	1.47		0.68	0	D	10	9	0	W.	J. T. La Bree.
ummerdale	Mariposa	5,270	16									*******		*****						Bertus Gude, jr.
ammit	Placer	7,017	39	27.3	- 3.2	45	18	12	20†	28	4.00	- 3.39	1.60	40.0	6	20	2	9	S.	Southern Pacific Co.
usanville	Laseen	4, 175	23								*****		*****	*****						James Branham.
amarack	Alpine	8,000	6	18.8		40	2	- 6	6	42	4.99		2.65	52.0	4	16	9	6	n.	Cal. Gas & Electric Co
ehachapi **	Kern	3,964	35	38. 4	- 1.1	65	24	19	9		0. 15	- 1.62	0. 15	T.	1					Southern Pacific Co.
ehama	Tehama	220	41		- 1.8	67	7	32 22 22 24	25		0.70	- 2.77	0.70	0	1	21	2	8	n.	Do.
eion Ranch	Kern	1,500	10	38.81		60	1	22	5	28	0.28		0.21	0	2					S. E. Bailey.
hree Rivers	Tulare	870	2	43.8		72	14	22	23†	44	0.20		0.20	0	1	19	8	4	SW.	E. D. Barton.
owle	Placer	3,704	26	42.4	+ 0.4	70	3	24	26	29	2.30	- 7.15	0.95	12.0	5	16	5	10		Southern Pacific Co.
racy **	San Joaquin	64	32	44.0	- 5.6	60	14	24	26		0.07	- 1.91	0.07	0	1	. 29	1	1		Do.
kiah	Mendocino	620	19	44.6	- 0.5	76	7	22 21	27	46	5.45	- 1.20	1.88	0	11	12	11	8	nw.	Dr. Geo. McCowen.
pper Lake	Lake	1, 350	27	45.0		76	7	21	26	44	2.94	- 2.18	9, 68	0	9	13	8	10	nw.	C. M. Hammond.
acaville	Solano	175	24		- 1.8	67	6	25	231		0.95	- 4.23	0.32	0	6	18	11	2	SW.	G. C. Coburn.
alley Springs **	Calaveras	673	23	46. 4	- 1.5	60	4	31	24	00	0. 95	- 3.05	0. 95	0	1	18	9	4	nw.	Southern Pacific Co.
isalia	Tulare	334	24	48.0	+ 1.8	72	31	26	12†	41	0.80	- 0.68	0.80	0	1	28	3	0	Se.	Santa Fe Co.
arner Springs	San Diego	3, 165	4	48.7	T 1.0	80	17	23	27	49	0.00	1	0.00	0	0	25	6	0		Mrs. F. S. Sandford.
		336	12			67	7	20		30	0. 00	- 0.29	0. 12	0	1	31	0	0	TO THE	Santa Fe Co.
asco	Kern.			46 9	4.7			10		40		- 3.00		0		23	5	3	nw.	
atsonville	Santa Cruz	23	16	46.2	- 4.7	70	12†	19	8	48	0.44	- 3.00	0.38		2				W.	Spreckels Sugar Co.
eaverville	Trinity	2, 162		39.7		61	9	18	26†	39	3.05	*******	0.90	4.0	17	16	7	8	******	U. S. Forest Service.
eitchpec	Humboldt	1,700	2	39.5		57	8	26	23	27	15.59		2.70	4.3	21	14	0	17	W.	M. E. Lathrop.
estley **	Stanislaus	90	23	46.6	- 1.9	65	14†	24	27		0.00	- 1.82	0.00	0	0	23	0	8	n.	Southern Pacific Co.
heatland	Yuba	84	25	44. 1	- 0.9	58	6†	25	27	27 37	0.86	- 2.82	0.37	0	6	15	3	13	S.	William Lumbard.
illows	Glenn	136	33		+ 0.6	72	8	22 10	27	37	0.42	- 2.62	0.27	0	3	16	7	8	n.	E. C. Mills.
osemite	Mariposa	3,945	8	33.2		65	8	10	26	42	1.18		0.95	5.0	2	21	3	7	8.	J. P. Kelley.

*, b, $^{\circ}$, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 2.—Daily precipitation for December, 1912. District No. 11, California.

Stations.	Watershed.	_	1	1	1		1	1	1	i						Day		721011											1 1				-
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Oregon.																																	
amath Agency	Klamath			. 10									. 50	. 10	. 30	. 30	. 80								. 40			****	. 40	. 20		.30	
amath Falls	Pitt			T.								••••	T.	. 26	.05	.30 .40 .14	.51	.02							. 05	. 09				. 40			
stillas	do				. 03								.02	. 40	. 26	.36	.62	. 21	.04							. 03					.05		
California.																																	
Canjornia.																																	
uanga	Coast																																. 0
amedaturas	Sacramento.				. 05										04	.05	.01	. 26							01					04	11	01	0
gels Camp	San Joaquin.													*	1.17		.31				1												1
ngiola ntelope Valley	do															. 40																	. 0
tioch	do								****							.00	.21				1		****		****		****	****		****	****	****	0
tos	Coast															. 65	. 10																. 0
rowhead Springs.	Sacramento.						****						****		.03	71	36	08			****			****			****		****				0
alon	Ocean															T.														****	.00	****	1
usa	Coast																																. 0
gdadkersfield	Desert San Joaquin.	****	****			****	****		****	****				****																			. 0
retow	Desert				8				1											-		1					1			1			
ear Riverear Valley (1)ear Valley (2)	San Joaquin. Sacramento. San Joaquin.			10			****		****							1 25	0							****	05					*			
ar Valley (2)	San Joaquin.			. 10											. 33		. 65	.09							.00		****					. 40	0 3
ar Valley Dam	do																	****						****						NANA			. 0
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lotta	do															.80	. 15														****		: 6
n Lomond	Coast															2. 10	. 15								700					. 20		. 23	3 2
rkeley	Sacramento.																	. 00							A.	****	****				.06	.05	5 1
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shop Creek	Coast															. 38		40										70		1 00			. (
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ythe	Desert								. 20																					1		1.	. (
ulder Creek	Coastdo	42													1 70	1.42	. 50		10												. 600		
anscomb	Desert	. 43	.08	. 20			****		. 10			. 18	.60	.92	1.73	1. 10	0. 10	. 20	1 . 10	.00					. 20		****			.00	2.00	. 92	2 14
rney	Desert Sacramento.		T.											. 20	1.04	0.82	.04	T.							T.					T.	.30	.07	
	do																																
huillalexico	Coast Desert		****		****			1.	****										****	1				****			1	****	****	1			: (
liente	San Joaquin.																																. (
listoga mpbell	Coastdo		.05										. 06		. 54		1.45																- 3
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mptonville (near).	Sacramento.				. 19			1							.52	2.10	1.36	. 02								.04		1	1			1.10	0 8
darville	Mtn. Lakes . Sacramento.		. 15	. 21	.03								02	14	. 20	. 10	.20	04	.03						.03					. 10	.03		
ico	do													. 02	.30	. 55	.06																9
nico (near)	do	T.		T.								. 03	T.	*	*	9.00	1. 14		10						T.				46	000	T.		
ina Flat	Coastdo	. 19		. 24							.00	. 18	. 12	. 48	2.00	2.00	.10		. 10					.00	. 43	*		.01	- 90	. 90	. 40	.27	7 5
ninosco scoaremont	Sacramento.				. 20										. 20	1.40	.60	.30								T.					. 10	T.	
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alinga	Shu Joaquiu.																														Name -	. 2	
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rona	Coast																																. 1
yamaca	Sacramento.															.07											0000						
er Creek	do				. 10							T.			. 51	1.87	1. 15					1				T.					. 54	. 8	9
d Monte	Coast Sacramento.												200		2.20	. 37	.09													0.0			
elta	San Joaquin.												. 20	. 04	2. A	1. 30								T.						. 00	. 25		
Sabla	Sacramento.															1.93															.60	.50	0
escanoevils Canon	Coastdo																													10000			-
nuba	San Joaquin .														. 54						1::::												
obbins	Sacramento.				. 05										. 25	1. 16	1.42	T.															1
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ınlap (near)	do															. 45		70															
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st Park	do				.06							. 03		.10	. 10	.34	. 05															***	
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ectra	San Joaquin.			*	.00	5										1.32										Sec.							2
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irmont	San Joaquin.				****										75	.06	01	10		1							1:::						
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																																	refer

TABLE 2.—Daily precipitation for December, 1912. District No. 11—Continued.

Stations.	Watershed.		1	1	1	1	1	1	1		1		ī		1	Jay (of mo	mth.			-					1	1	I	1	1	1	1
Diamon		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
alifornia—Contd.																																
rt Ross	Coast			8 .0											1.80															1	8 . 91	.37
uts Springs	. Coast															****															. 40	. 30
sno	San Joaquin.															. 35	T.															
ant	Sacramento.										****																					
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orgetown	do	****														1.95	1.00	0.07														. 70
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n Ranch	do	****																									1					
nnville nwood	San Joaquin. Coast														1 17	- 58															T.	т.
d Run	Sacramento				. 05									. 10	1.20	. 85	. 90				****										.40	
nzales	Coast														. 27	. 05																
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enville	Sacramento.													111	. 55	1.83	.22	****				****			****		****			*	13	. 04
dley	do	. 05										. 05		*	. 20	. 35	. 05															
ovelandinda																																
nford	San Joaquin.														.21																	
d Dam	Sacramento.			. 0											. 30	. 86	1.16												****			. 79
aldsburg		****	****		****	****	****	****		****	****	. 24	Τ.	. 38	1.38	. 20														. 20	. 11	.06
ber	Desert								. 02																							
len Mine	Coast														3.05		. 85													.12	1.30	
tch Hetchy				***		****	****			.07			****	****	-	. 83														****	.04	. 02
lister	do															.37	. 01															. 04
nbrook																70															. 10	
lville														. 55	1.99	1.08		.06			****	****			.04		****				71	. 54
llwild	do																															
ependence										723																						
iokip										1.			****	T.	1. 26	2. 26	1.28													****	62	37
e	San Joaquin.															.81	.04															
csonville																. 92																
nestown																1.30															0.000	. 15
n	Coast															.22		****													10000	
an			.30			****			****	. 03				****		. 07	****														1	
nedy Mine		. 05		****			****	****	****				. 05	*	*	*	*	4. 28			****				.07							. 43
tfield	Coast		. 06												. 36		.49								T.					.12		. 21
nvilleg City	San Joaquin. Coast														****	. 12																
ghts Landing															. 15	. 15	.01										****					
Grange	do															. 72																
ollae Eleanor	Coast San Joaquin.														****	T. 1. 15											****				00	
eside																1. 10	. 10														.00	1111
Porte	do		T.		. 04	****						T.		. 08												. 04			***	. 05	. 96	. 74
hrop	San Joaquin. Coast															1.50												****	****			
tonville	do																															
Grand	San Joaquin.														. 39																	
non Cove k Observatory			. 03		03											.48											• • • •				.21	. 19
ermore	do		. 12																							PW1 1					T.	T.
e Pine	San Joaquin.				****										1															***		
g Valley	Owens Mtn. Lakes.				T.										T.	. 25															T.	
dsburg	Coast																															
Alamos	do	****			0000					.01						. 16														****		
	S an Joaquin.															. 02	-															
Gatos	Coast		T.												. 11	. 95	. 08															. 05
Molinos re Observatory	Sacramento. Coast			****								. 04	.24		. 10		. 38													***		
loud	Sacramento.	ani			T.	-			1				. 11	. 47	.70	. 82	. 64					1	-		T.					.02		
oel	Klamath														. 30	. 30	. 15]													. 25	. 15
elinealia	Mtn. Lakes Sacramento.	. 03	T.	T.	. 12							1			. 21			. 12							. 10 T.	-				. 06 T.		
amoth Tank	Desert								.01									4	- 1	1											. 10	
copa	San Joaquin.		***												. 10							- 1						***				
posasville	Sacramento.			****								1		T.	T.	. 90	. 05						-					****				
8	Desert										***										***											
nes	San Joaquin.			-	. 07												. 10	. 16														
o Park	Coast San Joaquin.	***								1						. 20	. 33	.06			1											
ed Falls	do								1		1		- 1			. 68		. 04												****		
Grande	Coast															. 04																
llewater Creek (1)	San Joaquin.												1	1		. 01	. 75													. 24		
Creek (2)	0																. 10									-				. 24		
College	do		. 03												.09		1. 18	. 11													. 15	. 06
	San Joaquin.									-		-			94													1				.06
on (near)	3									-				. 15								***		000							T.	.06
ve	Desert			****																												
elumne Hill	San Joaquin.															1.24 T	. 34												1		.06	. 17
o Ranch	Coast	.07	****						1	***			.01	. 25	. 16	T.	.12	.02	.08	***	***	***			.08	1		****		. 12	. 03	.19
ague				- 00									. 44		4 16.57	4 15 15	.07	V -0,000			0000						- 0 0 0				* * * ******	.06

TABLE 2.—Daily precipitation for December, 1912. District No. 11—Continued.

Stations.	Watershed.	-	1		1	1	1	1 -	1			1		_	i							1				1	1	1					10
\$ W 9 6 1	1	1	2	3	4	5	6	7	8	9 .	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
California—Contd.																																	
ortgomery Creek.	Sacramento.																														. 95	. 35	6.
ount Tamalpais	Coast														. 68	. 39														. 12	. 18		
ount St. Helena apa City	do									0000	1				.70	.50							****	****						****	.22	.24	1.
apa (S. H.)	do	. 03												. 12	. 41	. 46														. 16	.07	. 10	1.
eedlesellie	Desert								. 15																								0.
evada City	Sacramento.				.08							T.			. 32	1.63	.71									. 02					. 28	. 26	
ewcastle	Coast																****					***		****				****				****	0.
ewhallewman	San Joaquin.		10000			10000																											0.
orth Bloomfield	Sacramento.			. 45											*	1.50	.70														. 40	.30	3.
orth Fork	San Joaquin. Coast	. 09									.01		. 25	. 28	1. 23	. 05	.58							****						.20		. 12	2.
akdale	San Joaquin.								. 60	T.																					T.		0.
ak Groveakland	Coastdo													T.	41	.08	.50	-01				****			****	****					14	.03	1.
akville	do		1		1											1.36										****			****	****		. 25	2.
ceanside	do								T.							.03			****			****											0.
jai Valley	Sacramento.										T.			.00		. 02																	0.
rleans	Klamath	. 20		. 27								. 46	.11	. 96	1.59	1.75	. 81	. 15						. 08	. 44			. 05	.72	. 80	. 65	. 19	9.
roville	Sacramento. Coast												Т.	. 02	. 80	. 08								****						T.			0.
alermo	Sacramento.															. 50		. 75															1.
alm Springs	Desert															.17	****					****	****	****				****					0
arkfieldasadena	Coastdo									. 25						. 05								****		***						****	0
aso Robles	do											100			1	. 12				****													. 0
eachlandhoenix Dam	San Joaquin.											. 16	1. 23	. 45	1. 45		. 25													. 02	. 28	. 38	3 1
ilot Creek	- Sacramento.			T.											. 25	1. 15																1. 16	4
inchot	Coastdo																		****		****	****									****	****	0
ine Crest	Sacramento.				. 08											1.37	.27					****								.07			i
oint Lobos	Coast		. 03	. 01												. 53	. 54	. 02						****		T.				*	. 13	. 02	
oint Loma	do	.01										.01			. 41	05	.14				****			****	T.	.0.		****		.08	.07	.01	
orterville	San Joaquin.														. 46																		0
ortulaca	do												T.	****		1 05		.02			****								****		14	0.5	2
rattvilleriest Valley	Sacramento . Coast												T.	. 12	. 14	. 46															-14	.00	0
uincy	Sacramento.											T.		. 12		1.26		T.						****	70					T.	.17	.01	
ed Bluffedding	do	. 01													67	21	1 38	03		****		****		****	T.					T.	14	.01	0
edlands	Coast															.01																	. 0
eedley	San Joaquin							. 43									.05																0.
epressaialto (near)	Sacramento. Coast				1							****		. 0.	. 74		.00																0.
io Vista	Sacramento.		.06												T.			. 02															0.
iverside	Sacramento.															. 02	.20								****				****		****	****	0.1
ohnerville	Coast			.17	. 05								. 25		.80		2.10	. 67	.17					T.	. 34			. 10		T.	. 40	. 66	7.
acramento	Sacramento.				****							47		.10	1.08														***	.12	14	****	0 2
t. Helena	Coastdo	****										.44		. 30	1.00																		0.
an Bernardino	do																																0.
an Diegoan Francisco	do	02		T.		****		****			***			T.	.57					T.	****				T.	****		1		T.	.11	.02	0
an Jacinto	do	.02																															. 0
an Jose	do		T.	. 01													.11															T.	0
an Luis Opispo	do				****	****										.30	.08														****		0
an Miguel	do														. 16																		. 0
an Miguel Island	Ocean San Joaquin	15												****						****		****	****	****	****						****	****	0
anta Ana River	Coast																															***	. 0
anta Barbara	do														m	T.	10						****	****		T		****			.00	· m	0
nta Cruz	do														. 48	. 33	. 05													× 10	. 10		. 1
anta Margarita	do														. 20																		. 0
nta Maria	do										***					T					****	****	****	****	****	***	****				****		1.
nta Rosa	do	. 05													. 54	. 63	. 15													.27		. 14	1
inta Monica	do															. 44	1.00	.06						****							. 72	T.	2
ven Oaks	San Joaquin Coast												****		. 34	****	****	****		****		****		****			1						0
asta	Sacramonto				1		1	1					1		1	1									1								
ingle Springs	San Joaquin												40	1 16	1 40	1 05	1 05	01							21					41	91	50	
rively	Coast	. 32		. 19	.08		****	****		11		. 10	. 40	1. 1.	1.40	. 04	1.00	. 91	.00											. 41			0
erra Madre	Mtn. Lakes .															. 60	1.10								T.						. 20		1
squoe Ranch	Coast Sacramento.															1 . 20																****	. 0
ssonledad																																	6
nora	San Joaquin				T.											. 75	.50													****	00	. 18	1
ortheast Farallone oreckies	San Joaquin Ocean Coast San Joaquin	. 03									****		****	.02	. 59	. 05	.04	.05			****	****	****	****	****	***	1	****	****	. 05	.00	.00	0
oringville	San Joaquin													***		T.																	
irling City	Sacramento.				****						T	T	T		1. 40	3.05	. 35	****		****	****	****	****		T.			****	****	. 30	.00		5
anwood. irling Cityockton (S. H.)	San Joaquin.													T.		. 15	.04														****	. 05	0
orey	do																				****		****	****	****						16	06	0
isunlphur Banks	Sacramento.		15	T										. 10	. 66	.10	. 14		****					****	****	T.	1			.10	.10	.00	1
mmit (1) mmit (2)	Sacramento.				1.10		T.	T.						1	.30	11.20	1.60								1	1		1	1	Inca-	1.20	. 00	11 4

TABLE 2.—Daily precipitation for December, 1912. District No. 11—Continued.

					1										1	Day o	of mo	onth.														
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
California—Contd.																																
usanville	Mtn. Lakes .																															
amarack	Sacramento.															2.65	1.80													. 29		. 25
ehachapi	San Joaquin.															. 15																
ehama	Sacramento.													T.	T.	T.	. 70															
eion Ranch	San Joaquin															.07	.21															
hree Rivers	do															. 20																
wie	Sacramento.			T.												. 95	. 45	. 35													. 45	. 10
acv	San Joaquin						1								. 07				10000												-	
lare	do	1000		1												. 32																
istin (near)	Coast						-	1		.05						.04																
kiah	do	T.	. 13			1	1	1							1. 15	1.88	1.30	. 10							.02					10		. 18
pland	do						1							1					1			1						-		. 10		
pper Lake	Sacramento.	T	.07				1		1			T.				. 58					1									T.		
pper Matole	Coast		* 10.0	****						****	12	12	45	1 35	3 55	2 75	80	03	08						04	.24	****				1.31	. 59
acaville	Sacramento.	. 03	T											. 28	20	4. 10	100	.00	.00			****	****		.03	. 44					1.01	. 07
alley Springs	San Joaquin	. 00	A .																											. 10		. 00
isalia	do													-		. 80																
arner Springs	Coast												****	****		. 00		****			1											
asco	SanJoaquin															19					1											
atsonville	Coast			10000	0000				0000						. 38					10000	0000											
eaverville	do	19	.03								01	.08	10	50	. 90			. 10							14			T		. 10	20	90
	Klamath		. 02								. 01					1.48								.08	70	10		.09	11		1.62	1 97
eitchpec	Sacramento.	. 30	. 02	.04	.00							. 01	. 29	1, 33	1.00	1.83	1 94	. 09	1, 94	.01				.08	70	. 10		. 00	. 11	1. 30	. 69	
estlev	San Joaquin			1.		***												. (19							1.				****		. 09	. /9
															1.38																10	30
est Point	do			.04										1.	T.	. 34		.14													. 10	. 19
	Coast											. 01			.27	.37	. 12		****													****
heatland	Sacramento.		(9)																												.08	. 01
illows	do		T.									T.		.07	.27	.08																
osemite	San Joaquin															. 500	.23												0000			

* Precipitation included in that of the next measurement,
Separate dates of falls not recorded.

| | Frecipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 11.

														Califor	nia.											
Date.	Lake	view, eg.	Altu	ras.	Brans	comb.	Braw	rley.	Colt	188.	Eur	eka.	Free	sno.	Indep		Ang	os eles.	Mor Tama		Nev Cit		Porte	rville.	Red I	Bluff.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Mtn.	Max.	Min.
	35 40	16 17 26 27 13	48 41 50 41 38	11 14 15 16 9	45 55 52 54 59	28 29 29 29 29 26	77 67 74 61	46 45 35 40	56 58 57 57 57	29 36 33 35 40	51 53 53 50 51	38 42 41 38 34	58 53 59 54 53	32 34 34 36 29	50 53 58 58 53 42	23 23 33 33 24	61 62 69 67 62	54 50 46 45 49	47 47 54 44 48	39 39 38 37 37	55 57 62 50 56	23 24 25 23 18	61 65 60 65 61	32 33 35 33 29	52 57 54 56 58	333334
	46 46 45	17 23 28 19 18	44 49 53 51 46	4 7 12 11 10	65 72 73 62 60	31 40 40 38 37	60 64 58 64 67	44 38 40 46 44	66 70 71 56 52	40 44 40 30 28	54 58 63 56 58	36 39 42 40 48	56 59 59 65 59	32 30 31 40 33	50 54 53 45 58	26 29 34 28 20	60 65 66 61 62	44 45 44 50 43	53 55 59 46 50	46 42 42 40 40	57 71 67 63 58	22 25 29 24 22	58 62 65 66 62	27 28 30 30 31	67 71 71 56 55	4 4 3 3
	47 47 42 38	23 33 32 31 27	52 55 49 44 42	20 27 36 31 31	58 51 50 51 45	39 45 45 45 45 35	69 69 71 71 67	32 32 35 33 35	53 58 57 56 55	36 44 40 40 40	55 53 58 57 51	48 46 47 45 44	55 61 63 66 54	35 34 34 39 41	50 51 50 48 58	18 23 21 20 31	66 73 71 68 60	45 51 48 46 45	48 52 49 46 45	41 40 45 37 35	60 62 62 52 42	24 25 25 33 31	60 63 63 75	30 31 31 30 40	55 56 51 52 52	
	34 36 36 36 32	26 30 28 13 7	41 49 42 38 37	30 32 25 20 9	50 53 51 57 58	38 42 40 30 29	70 73 70 64 62	35 33 32 34 32	52 59 55 58 58	46 43 38 36 42	52 55 51 50 50	48 50 40 37 34	53 55 58 53 56	40 42 41 45 38	46 64 54 54 47	18 24 25 20 25	67 76 88 79 72	43 48 55 53 49	48 51 47 49 48	43 45 41 40 40	46 61 59 63 59	31 38 26 26 21	58 64 60 51 59	37 31 33 44 32	48 56 50 56 59	
	31 39 36 33	16 9 14 23 12	33 43 43 38 38	15 7 11 12 5	58 59 53 50 55	29 29 28 27 26	62 58 64 67 67	26 35 26 25 27	55 52 50 51 54	40 33 26 25 29	50 54 50 46 47	33 36 39 38 36	52 53 56 56 43	29 31 30 30 31	36 36 48 60 44	17 17 18 15 29	64 60 65 67 67	44 44 43 45 38	48 47 51 43 43	38 40 38 34 33	51 55 58 52 56	21 21 21 21 21 19	63 55 64 56 60	31 28 28 26 26	53 53 47 46 52	
	40 35 33 37 35	9 11 16 25 25 26	45 46 40 42 41 40	8 6 6 25 30 28	57 58 56 47 47 55	27 28 26 34 33 33	63 64 63 63 71 69	38 27 25 28 31 29	53 52 57 58 58 58	28 24 29 42 41 40	52 48 48 56 54 53	35 35 34 45 43 44	59 56 53 56 64 60	27 27 30 33 39 36	44 45 54 50 64 68	15 12 13 18 20 25	69 72 64 68 66 63	43 46 45 46 47 43	49 54 48 51 47 46	35 43 38 41 41 39	61 62 61 51 49 42	21 20 22 29 33 30	57 59 61 62 63 63	28 28 29 30 30 31	54 49 57 54 48 50	
ıs		20.6	43.8	16.9	55.4	33.4	64.2	33. 2	56.6	35.6	52.8	40.5	56.7	34.3	51.2	22. 2	66.9	46.4	48.8	39.6	56.8	24.9	61.3	31.0	54.7	3

												Califo	rnia.											
Date.	Redl	ands.	Sacrar	nento.	San I	Diego.	San I		San	Jose.	San :		Sar		Santa	Rosa.	Siss	on.	Stock	kton.	Sum	mit.	Yosei	nite.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	62 63 69 65 56	45 43 38 34 42	56 57 59 57 56	34 38 35 39 38	59 60 63 62 62	54 - 48 - 44 - 47 - 46	55 58 57 59 59	45 47 46 47 47	59 58 62 57 59	35 39 34 36 42	62 56 66 60 62	38 37 46 48 41	62 62 72 70 60	44 39 38 44 46	57 58 61 57 64	30 33 33 30 37	48 45 48 41 43	23 23 26 23 24	. 58 . 52 . 60 . 58 . 58	34 35 35 37 34	35 36 44 33 35	19 17 27 17 15	54 53 59 49 50	18 18 18 16 28
6 7	60 59 63 58 63	32 38 36 43 34	57 61 59 61 55	37 36 35 36 36 35	62 60 61 62 60	45 41 48 46 45	60 61 67 56 55	48 47 45 45 45	64 63 69 64 60	39 33 32 33 34	64 65 65 64 65	34 30 34 35 31	61 60 65 60 63	37 39 37 43 37	63 64 67 65 55	30 30 30 30 43	48 56 49 46 45	24 23 25 24 29	53 58 58 58 58 57	27 29 30 30 30	36 39 38 39 40	13 15 18 18 18	55 55 65 58 46	20 18 28 18 15
11		33 41 37 35 36	53 57 61 60 56	40 35 42 39 43	60 65 64 64 58	43 46 47 44 45	57 59 58 59 53	48 47 47 50 47	60 64 69 61 55	39 35 39 48 40	61 66 69 66 56	32 32 32 38 42	62 69 68 65 64	38 41 39 40 42	51 59 57 56 56	44 44 45 53 38	48 52 43 42 37	34 40 33 28 28	54 52 62 60 55	34 30 30 36 42	42 44 38 34 22	20 26 28 28 28 20	51 55 48 61 54	16 20 16 19 28
16		32 36 42 40 36	52 58 53 54 54	45 41 41 39 37	58 70 78 72 73	41 45 50 51 49	60 56 58 58 58	51 50 48 47 47	59 59 58 61 58	46 48 43 38 36	60 63 72 60 62	38 49 52 50 46	72 68 79 70 64	40 40 46 42 41	60 61 62 59 59	41 45 38 36 29	38 38 42 35 38	31 28 29 19 24	55 56 56 54 53	44 40 45 40 29	29 39 45 30 30	20 19 21 20 12	43 38 44 34 38	22 20 17 19 15
21	60 65 69	31 41 31 33 32	55 54 55 52 54	37 32 33 32 35	65 62 61 63 62	44 45 39 42 42	55 57 54 54 55	45 46 42 42 42	57 57 57 53 57	32 31 29 28 31	59 62 65 63 57	45 33 30 38 44	60 60 60 65 66	38 35 35 36 37	59 60 55 52 58	31 30 26 27 27	36 40 40 28 35	12 21 18 17 15	52 53 48 48 48	30 28 26 23 24	29 30 36 33 32	12 13 20 21 12	42 42 44 46 44	11 13 12 14 11
26. 27. 28. 29. 30. 31.	65 67 69 69 66	29 29 31 33 36	53 52 56 56 59 54	33 31 38 43 42 42	66 60 65 63	44 46 43 43 42 39	55 54 56 54 56 57	44 41 44 44 47 44	58 55 57 60 62 56	28 26 35 35 35 39 37	66 68 61 65 63 62	35 30 48 44 43 42	63 67 71 70 62 65	36 36 -36 40 44 39	58 57 58	24 25 29 36 39 37	45 42 42 36 38 38	15 21 26 27 26 22	53 54 58 58 58 58 57	27 20 32 35 43 40	44 43 36 34 34 32	16 22 18 20 20 20	44 39 46 50 53 47	10 12 19 19 22 23
Means						45.0	57.1	46.0	59.6	36.1	63.1	39.3	65.3	39.5	58.7	34.5	42.0	24.5	55.3	32.9	35.8	18.8	48.6	17.9

, b, e, indicate respectively 1, 2, 3, etc., days missing from the record.

CLIMATOLOGICAL DATA FOR DECEMBER, 1912.

DISTRICT NO. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor.

The month was unusually stormy, although the rainfall was slightly less than usual. There were no severe cold spells and the closing days were unusually mild. These mild temperatures extended well up the mountain slopes and caused numerous avalanches. One in Idaho, near the town of Mace, on the 29th, crushed to death a miner named James Flaherty, and another, 1 mile west of Laconia, Wash., completely wrecked an eastbound freight train on the Chicago, Milwaukee & Puget Sound Railway. On December 28 the British bark *Torrisdale* was wrecked off Grays Harbor, due somewhat to the shifting of her ballast as well as to the storm prevailing at that time. The ship, valued at about \$40,000, is a total loss, but the crew were saved. The snow on the mountains was, on the average, less than usual, but it drifted well and these pockets will make a good founda-tion to retain that falling later. Winter ranges were generally bare, which caused a saving of hay that can be used later if necessary. Building operations and transportation companies suffered more delays than usual, while agricultural conditions at the close of the month presented a favorable outlook.

TEMPERATURE.

The mean temperature of this district for December, 1912, was slightly above the monthly average—the excess, with few exceptions, ranging from one-tenth of 1° to 3° above the normal along the Columbia River from near its mouth to the Canadian boundary. It was also warmer in the greater portion of the Puget Sound region, western Montana, and the central part of southern Idaho. Along the immediate coast and over the greater part of central and southern Oregon and portions of western and southern Idaho the mean temperature was below the normal. The highest temperature, 76°, was reported from Kiona, Wash., on the 3d, and the lowest, —26°, from Moran, Wyo., on the 25th. The average temperature for the district was 32.4°, which was 1.2° above the normal.

PRECIPITATION.

While there was less than the average amount of precipitation in nearly all sections of the district, scattered areas in western Washington and Oregon and northern Idaho showed an excess, the greatest being reported

from northwestern Oregon. A marked deficiency in rainfall is shown at stations along the coast, notably in northwestern Washington and southwestern Oregon, while less than the usual amount of precipitation occurred in the Columbia River Valley in Washington, and in western Montana and southern Idaho. The records of 368 stations give an average of 3.98 inches for the district, which is 2.20 inches below the December normal. The greatest monthly amount, 25.28 inches, was reported from Quiniault, Wash., and the least monthly amount, 0.15 inch, from Garnet, Idaho. The greatest daily precipitation, 4.60 inches, was recorded at Yale, Wash., on the 29th.

THE RIVERS.

The Snake River was nearly normal during December, and the Columbia and Willamette Rivers were slightly below normal. There was a gradual fall in the Columbia River; the highest stages occurring on the 1st of the month, and the lowest on the 31st. The highest water in the Snake River also occurred at the beginning of the month, but the lowest stages were recorded at the beginning of the second decade. The Willamette River was at its lowest stage at the beginning, and at its highest near the end of the month; the rise in this river was general, but not continuous, during that period.

MISCELLANEOUS PHENOMENA.

High winds were reported on the 3d, 17th, and 29th; they were of gale force and unusually severe on the coast and sounds of Washington, those of the 3d and 17th being of marked severity. During the last week of the month gales were of almost daily occurrence on the coast and sound, imperiling and damaging considerable shipping, as well as discontinuing the towing of logs and barges. Maximum velocities of wind were reported as follows: North Head, Wash., 90 miles from the south on the 30th; Tatoosh Island, Wash., 88 miles from the south on the 17th. Sand storms, unusual for this season, were experienced at Cliff, Oreg., and Hatton, Wash., on the 3d, and also at the former place on the 29th. Thunderstorms were reported from a limited number of stations in Oregon, and foggy conditions were quite general at a number of stations.

Table 1.—Climatological data for December, 1912. District No. 12, Columbia Valley.

			years	Tem	perature	, in d	legre	es Fah	renh	eit.	Prec	ipitation	, in inc	ehes.	days,		Sky.		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind cion.	Observers.
Montana.	Deer Lodge	5,300	10																	C. D. Demond.
olumbia Falls	Silver Bow Flathead	5,716 3,100	17	25.0 27.1	- 0.8 + 1.8	43 42	9†	- 3 - 1	25 25	27 30	0.68 1.71	- 0.06 - 0.21	0.30 0.50	5.3 15.4	9	14 9	4	13 22	sw.	J. R. Wharton. J. M. Grist.
omo	Ravalli	3,700	3	31.7		44	6†	11	25 21	25 25	1.24		0.41	12.5	10	6	0 8 5*	17		Hiram Platt.
eer Lodge	Flathead Deer Lodge	4,529	7	31.8		48	3	11	21	20	0.73 0.65		0.25	2.8 6.5	7	10a	27	15ª		A. J. Ruechell. H. B. Grant.
ast Anaconda	Lincoln	5,500	6	24.8		39	17	- 6	21	29	1.02		0.22	13.5	12	6	6	19	w.	C. D. Demond. Mike Petery.
amilton	Ravalli	3,575 6,000	9	30.8	+ 2.5	47	3	11	11	24	0.31	- 0.30	0. 13 0. 21	2.8	8	11	12	16	3.	Hamilton Chamber of Co
at Creek	Powell	3, 150	2	26.3		48	3	- 5	21	30	5.68		1.10	59.4	13	6	7	18	sw.	M. K. Landreth. U. S. Forest Service.
eronalispell	SandersFlathead	2,261 2,965	13	30.6 27.2	+ 3.5	66 48	3	6	27 21	45 23	2.81	- 1.16	0.80	27.5 4.0	16	10a 2 5	8	21	SW.	E. Knott. U. S. Weather Bureau.
ibbyost Creek	Lincoln Deer Lodge	2,055 5,200	2 2	26.2	+ 3.5	42	14	10	20	26	2.59 0.65	+ 0.18	0.46 0.12	17.1 12.8	19	17	5 5	21 9	nw.	U. S. Forest Service. Frank Henault.
issoula	Missoula	3,225 6,800	32	28.5	+ 3.9	48	3	6	25	22	0.73	- 0.69	0.18		15		11	12	SW.	U. S. Weather Bureau.
phirvando	Powelldo	4,207	12	22.4	+ 1.9	40	13	- 5	25	34	3. 16 1. 72	- 0.16	0.85	18.0 29.7	12 17	8 2	0	29	W. W.	E. S. Wilton. S. B. Muchmore.
hilipsburg	Granite	5,275 2,475	13	29.0	+ 0.8	43	7	8	25	28	0.27	- 0.16 + 0.34	0. 10 0. 27	5.0 6.7	7	6	13	12	sw.	G. T. Bramble. James M. Self.
leasant Valley	Flatheaddo	2,475 3,500 2,920	4	21. 0 30. 1		47 50	3	- 13 15	25 25	41 18	2.49 0.86		0.50	22.4 7.0	16	***				A. D. Stillman. F. P. Brown.
olsont. Ignatius	Missoula	2,700	6	30. 8		49	28	10	25	24	0.24		0.12	2.6	9	1	3	27	80.	U. S. Reclamation Serv
altesetevensville	Ravalli	3,600	7	29.8		46	10	6	25	34	10.78 0.18		1.87 0.05	96. 0 0. 1	15	8 7	11	23 13	W. SW.	E. K. Tarbox. University Orchard Co.
hompson Falls	Sanders	2,462 2,375 5,064		30.2			26	6 7	27	30	2.77 3.79		0.55 1.30	18. 4 33. 6	15 12	7	9 3	15 24	nw.	U. S. Forest Service. James Hylent.
rout Creek Villow Glen Stock Farm	Deer Lodge	5,064	1	26.4		50	10	4	111	41	0.50		0.30	2.0	2	10=	5			G. E. Luce.
Wyoming.	Uinta	6,200	8			45	114	- 15	22	341	0.72		0. 15	9.0	10	12	5	14		A. V. Call.
ftonlta	do	7,000	2	14.4		45	111	- 17	22	39	1. 10		0.28	14. 4	7	8	9	14	SW.	Mrs. Lucy Brown.
echler Riveredford.	do	5,900	12	16. 4	- 1.6	44	13	- 16	22	32	0.75	- 0.63	0.21	12.1	7	9	5	17	w.	U.S. Army. C. G. Heiner.
oran		7,000	6	11.7		35	134		22 25 22	42 55	2. 18 3. 11		0.78	22.7 38.0	13 15	5 10	7	19		U. S. Reclamation Serv U. S. Army.
Nevada.	renowstone rank.	1,000	0			31	13	- 22	66	30	5. 11	******	0.00	35.0	13	10		14		o. b. mmy.
an Jacinto	Elko		7	21.4		49	124	- 16	22	43	0. 10		0.10	1.0	1	18	5	8	n.	F. W. Marchant.
Utah.																				
tandrod	Boxelder		7																	•
Idaho.	Cassia	4,650	10																	C. E. Bocock.
lmomerican Falls	Oneida	4,341	. 3			70				40	1. 17		0.40	5.0	8	15	8	8		Wm. D. Cahoon. Geo. Stoll.
rrowrock	Boise	3, 100		23. 4 28. 1		56 48	14	- 3	23 21	27	2.01	*******	0.60	10.5	9		7	11	W.	U. S. Reclamation Serv
lackfoot Dam	Bingham Bannock	4,503 6,200	16		1	49	12	- 9	21	† 42	0.40	- 0.46	0. 19	4.6	5	5	20	6	sw.	E. A. Dowd. S. C. Waddell.
ogus Creek	Boise	4,200 2,739	4	31.6	- 0.6	53	13	9	26	27	2.08 0.83	- 0.89	0.63	20.0 4.5			16	8	se.	F. P. Ingraham. U. S. Weather Bureau.
onners Ferry	Bonner	1,850	5															11		W. H. Heideman. Patrick Moriarty.
oulder Mineuhl.	Boise	4,800 3,800	3 5	28.6		1022	13	6	22	31	3. 12 0. 65		0.66	30.7 5.0		11		12	W.	S. C. Orr.
aldwellaldwell Station	Canyondo	2,372	8	29. 1 27. 6		40	15 15	5 0	27	29 33	0.71		0.28	4.5	9 8	10	17	4	W.	Wm. J. Boone. C. B. Hampson. Chas. H. Shepherd.
ambridgeedar Creek Dam	Washington	2,651	16	25. 6	- 0.6	45						- 0.60		16.0 23.0	7					Chas. H. Shepherd. Robert Hoffman.
hesterfield	Bannock	5; 424			- 1.5		18	- 15		1	0.34	- 0.85	0. 16	5.0	5	10	9	12	W.	C. S. West. Wm. Potter.
larks Fork	Bonner	2,084 6,000		31.0	******	44	2	16	11	16	4.71		0.80	29. 7	20	5	8	18		R. L. Sutcliffe.
ounciluldesac	Adams Nez Perce	3,059 1,520		24.8				19			3.70		0.44	3.7	8	10		13		F. L. Featherston, Mrs. B. B. Caldwell,
Deary	Latah	2,854	1	30.7			9						0.80	30.0					SW.	W. J. Davis. Emil Schuessler.
Pent Priggs	Clearwater	1,350 6,097	5	14.8		43	12	- 16	22		1.06		0.32	18.1	8	9		16		W. H. Durrant.
mmettorney	Canyon Lemhi	2,350 6,000				. 50	30	4	21	30	0.79		0.26	4.6	8	10	7	14	n.	U.S. Forest Service. M. B. Merritt.
arnetlens Ferry	Elmoredo	2,575 2,569	13	33.0	- 1.5		13		21 22	† 31 35	0. 15 1. 00	- 0.49	0. 15	6.0		17 16		11		A. A. Kenison. I. E. Perkins.
ooding	Lincoln	3,572	3	24.8		. 51	13	- 3	20	# 35	0.68		0.31	6.5	5	12	11	8	W.	John Krall, jr.
rand Forks	Shoshone	3,000	3 3			. 46	5	- 1	27	35	8. 45		1.23	72.4	22	3	8	20	W.	J. E. Keach. H. E. Hanna.
rimes Pass	Boise Owyhee	5,200 2,381	3 4	1		52	31	11	22	27	3.11		0.71	29.2			6	0	е.	Jos. M. Clarke. Fred Perry.
ailey	Blaine	5,347	10	21.6	+ 0.7	44	12	- 5	21	33	1.34	- 0.22	0.36	16.0	7	11	13	7	SW.	U. S. Forest Service. J. W. Bouten.
ollisterotspring	Twin Falls	4,550 2,590	7	32.5	*****		13 13	- 4		34 29	0.74		0.33	8.2	9 2	17	22	6		. J. M. Waterhouse.
laho City laho Falls	Boise	4,000		24.7	+ 2.5	57	12	- 8	21	47	0. 43	- 0.77	0.13	7.1	5	13	9	9		Mrs. Emma Hammer. Dr. T. M. Bridges.
dian Cove	Owyhee			. 30.6		. 55	12			38			0.52	1.0		. 15	8	8	W.	Capt. O. M. Carter. A. M. Henke.
dian Valley		2,999 6,500	3						1		1.91			15.5						. Mrs. Eva Buckland.
Cellogg	Fremont	2,305	8	30.2				- 20					0.98	14.2			0			W. McM. Huff. W. H. McCormick.
irkham looskia	Boise	4,200	3			58	2				3. 48 0. 63		0.60	33. 0 5. 1	14		11		w	Mrs. Josie B. West. U.S. Forest Service.
akeview	Bonner	1,261 2,250	15	30.6	- 0.9	47	4 7	15	21	18	4.82	1	1.80	25.5	17	7	1			E. D. Faust. Mrs. Emma L. Brown.
andoreeadore	Lemhi	5,300				45		2					1.10	60.8						. Jos. Balluff.
ewistonttle Camas	Nez Perce	757 5,000	12	37.6	+ 0.1	61	3	21	9	22	0.45	- 1.07	0.17	1.0		6 3	10			U. S. Weather Bureau. Solon McCoy.
oon Creek	Custer	6,000	3				13		26 28	42 26	1.67		0.27	22.8	14	8	5		SW.	Mrs. Mary Williams. U. S. Forest Service.
fackay feridian	Ada	5,897 2,657 3,275	5 2 2 2	18.0 30.4		. 54	13	4	21	34	0. 24			4.0	10	9	10	12	80.	A. W. Garrett. I. S. Carter.
lesa	Adams					. 46	10	1	27	33				. 17.7		. 9	0			

TABLE 1.—Climatological data for December, 1912. District No. 12—Continued.

			years.	Tem	perature	e, in	degre	es Fal	arenl	heit.	Pre	cipitation	, in in		days,		Sky		direc-	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest dally range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part-	N u m b e r o f cloudy days.	g wind	Observers.
Idaho-Continued.			-							-					100					
loscow	Elmore	3, 150	20	26.7		52 53	13	8	21 21		2.69 0.74		1.00 0.24	12.2 6.0		3 9	12	16 14	S0.	University of Idaho. Mrs. Ellen Manion.
furtaugh New Meadows		3,950	8	25.0		531	13	- 12	22	42	0.48			4.0					w.	J. E. Steinour. E. G. Dunn.
ezperceakley.	Lewis	3,082	3	29.6		48	3†	8 3	22	24	0.81	1 0 00	0.22	5.0	7	15	4	12		P. Mitchell.
'Hara Bar	Idaho	1,557	2		+ 0.2		2†	3	221		0.80	+ 0.26	0.20	14.0	6	7	13	11	8.	John Adams. J. D. Agnew.
rofinoayette		1,027 2,159	8 22		- 2.3	50 46	31 16†	12	27 27	25 27	2.09 0.57	- 0.83	0.68	8.5	9 7	5	19	17	n.	Geo. Alteneder. E. F. Allen.
ierson	Custer	7,000	2	12.4b		40	14†	- 220			2.04		0.33	28.0	8	17	0	14	S.	D. P. Clarke.
ine leasant Valley	Ada	3,000	1 5	28.3	******	51	13	0	21	31	2.31 0.58			16.0	5 9	15 16	6 2	10 13	80.	Mrs. Jennie Potter. C. E. Friedrich.
ocatello	Bannock	4,483	13	27.4	- 1.0	51	13	2	21	30	0.20	- 0.66		2.0	7	3	14	14	S0.	C. E. Friedrich. U. S. Weather Bureau. Mrs. Fannie E. Say.
oplar	Bonneville	5,500	5 2	18.8		44	14	- 14	21	38				7.0		15	9	7	sw.	C. M. Lawrence.
orthillowers Ranch	Bonner	1,665 4,300	23		+ 1.2	41	2†	12	25	22	1.79	- 0.77		22.0 16.5	10	9	3	19 20	SW.	H. A. French. Mrs. Mary French.
riest River Experi- ment Station No. 1.	Bonner	4,300 2,500		27.6		39	3	16	11	15	4.87			30.4	18	4	3	24	S.	D. R. Brewster.
riest River Experi-	do	2,500		29.3		42	3†	16	19	21	4.02		0.80	25.1	17	4	3	24	50.	Do.
ment Station No. 2. riest River Experi-	do			27.0		42	3†	10	71	25	4.06		1.08	27.3	19	4	3	24	0.	Do.
ment Station No. 3. yle Creek	Bolse		3								2.96			21.1	15	16		11	w.	P. V. Smith.
attlesnake	Elmore	4,000	3		******						2.19		0.54	11.9	14	8	7	16		R. M. Green.
ichfieldoseberry	Lincoln	4,306 4,872	3	17.7		47	13 8	- 11 - 20a	21 20	36 51a	0.72			23.3	8	8	20 10	10	SW.	Idaho Irrigation Co. Rev. T. P. Graham.
oseworth	Twin Falls	4,650									0.26		0.08	2.7	8	2	21	8	SW.	D. B. Hartwell.
apert	Fremont	4.968	6				13	- 5	22	34	0.23		0.14	4.1	6	14	7	10	sw.	Will Parry. Heber C. Sharp.
Maries	Kootenai Lemhi	2,263	15	23.4		50	3	0	25+	28	0.47		0.12	4.9	6	5	20	6	nw.	J. S. Turnbull. Z. T. Vincent, jr.
ndpoint	Bonner	2,086	7 2	34.6		50		10		33	4.39		1.00		17	7	4	20	S.	S. M. Moore.
eep Hilloshone	Boise Lincoln	5,000 3,968	3 4	26. 2b		52b	12†	1ь	20	32ь	3.10	*******	0.74	21.5	11 7		••••		w.	C. M. Gardner. Zell Truman.
ver City	Owyhee	6,280	5								4.72		1.08	25. 2	14	8		12	Se.	Russell Stoddard.
ldier Creek	Elmore	5, 755	2			411	9†			10000	1.67		0.61	19.8	6		****		nw.	Wm. W. Newell. J. E. Minear.
irit Lakeringfield	Kootenai Bingham	2,560 4,420	2					- 13	21	38	0.21		0.12	4.0	2	12	13	6	sw.	M. C. Krause. Mrs. W. A. Edwards.
ring Hill	Ada	3,607		32.8		62	3	6	9	44	0.92		0.35	9.5	8 2	1	11	19	90.	R. G. Lyons.
gar nnysideipod Mountain	Fremont	3,500	3	30.9		45 55	13† 3†	- 11 5	21 22†	42 35	0.32		0.20 0.31	5.0 7.0	6	9	0	22	sw. nw.	Utah-Idaho Sugar Co. Col. M. W. Wood.
ripod Mountain	Boise Twin Falls	4,300	3 7			54	13	1	27	35	2.28 0.54		0.52 0.17	15.5 6.0	10	12	10 14	17	w.	Mrs. Verna Paddock. J. A. Waters.
rnon	Fremont	5,050	14	18.2	- 2.3	42	12	- 15	22	45	1.05	- 0.61	0.44	12.9	8	10	8	13	SW.	A. M. Slatery.
allaceeiser	Shoshone Washington	2,728 2,114	5			42	31	11	22 21 27 26	20 28 31	6.95		1.12 0.42	5.0	19	11	5	15	e. se.	U. S. Weather Bureau. J. W. Lapish.
endell	Lincoln		4	00 .		52	13	3	26	31	0.85		0.36	3.7	8 5	16	12	3	W.	Chas. L. Dingler.
Washington.																				
berdeen	ChehalisSkagit	162 60	21 18		- 0.1	52 52	4†	29 30	7† 6†	18 15	12.62 3.99	-1.31 + 0.21	1.98 0.67	4.0	21 20	0	25 18	6	w.	C. S. Weatherwax. Douglass Allmond.
natone	Asotin			28.7		46	3 2	6	20	28	3.78			39.5		10	10	11	SW.	W. A. Hamilton.
akerellingham	Whatcom	60	17	41.8	- 0.1	44 54	201	27 26	31 8 8	28 12 23 18	8.90 2.30	- 1.91	1.32 0.42	9.4	17 17	3 4	1 2 8	27 25		R. M. WhiteSanford B. Mayhew.
ellingham (near)	do	107	1 15	40.3		52	13 13	26 27	8	18 16	3.52	- 0.53	0.34	0	20	2 1	8	21		U. S. Bur. of Plant Industr I. M. Scott.
ewett	Chelan	2,200	3	*0.0	T 3.2	52				10	7.93	- 0.33	1.20	66.0	17				Se.	John Burmeister.
emertonewster	Kitsap Okanogan	30 1,620	15	28.6		46	3	15	20†	18	6. 20 1. 01		1.44	7.0	14	7	8	16	30.	U. S. Navy Yard. Mrs. H. F. Bertram.
imping Lakedar River	Yakima King.	3,400	1																	
ntralia	Lewis	535 212	5 19		- 0.1	63	25	26	8	33	7.57 8.44	+ 0.32	1.53 2.00	0.3	17 20	5	12	22 18	S.	Geo. Landsburg. I. S. Turner.
Elum	Kittitas	1,930 140	13		+ 0.5	47 51	6	23	21 8†	29 22	4.80 6.20	+ 0.49	1.00	53.0 0.2	18 21	13	6	12 24	ne. s.	J. A. Balmer. Geo. Gibbs.
lfax	Whitman	2,300	23 12	35.0	+ 1.5	56	4	10	21	27 19	3.28	+ 0.48	0.90	6.0	8	3 7	0	24	W.	I. B. Doolittle.
lville	Stevensdo	1,635		26.4	+ 0.5	43	2 3	5 2	20 21	29	1.67	- 0.19	0.50	9.7	9	9	3	19 25	w. nw.	W. L. Sax. U. S. Forest Service.
nconullywiche	Okanogan Yakima	2,300 1,874	12		+ 2.3	47 52	1†	10	24 25	25 25	1.02 0.92	- 1.15	0.30 0.45	10.2	5 8	10	6	15	nw.	Wm. Baines. U. S. Reclamation Service
escent	Lincoln	2,250	12			04					0.92		0. 20	5.7			12		шw.	U. S. Rectamation Service
rringtonvenport	Snohomish	567 2,450	3	28.00		45°	3	70	21	25°	1.76	•••••	0.35	6.5		18	3	10		J. L. Thayer.
yton	Columbia	1,700	26 1	36.5	+ 2.3	56	3	21	81	23	1.46	- 1.59	0.45	T.	11	6	10	15	sw.	W. W. Headron.
er Parktroit	Mason	2,050	4			50	3	26	21 19	27 22	2.69 10.36		0.90 2.60	24.4	11 18	11 6	5 60	15 20	90. 8W.	R. H. Allison, jr. Walter O. Eckert.
rie (near)uglas Lake	Walla Walla Skagit	3,000 440	3								3.82		0.60	20.5	15 23	80	60	14	80.	T. Z. Andrews. Michael Pecovich.
yden	Chelan	960	2								3.60	*******	0.84	54.6	17	8	9	14	nw.	Wenatchee Valley Gas a
ekabush	Jefferson	380	4																	Elec. Co.
st Soundensburg.	San Juan	1,571	24	39.7		50 58	13†	26 10	3† 25	21 37	3.40 1.23	- 1.36 - 0.26	0.65	3.0 11.5	19 12	3 9	11 2	17 20	nw. nw.	B. E. Harrison. R. Lee Barnes.
hrata	Grant	1, 265	9															20		
rks rt Simcoe	ClallamYakima	480 1,427	2 18							****	19.62		2, 49	T.	22					R. H. Palmer.
romeat Lake	Stevens	1,200				52	18†	14	19		1.63		0.90	7.3	6	15	8	8		W. W. King. C. M. Mackintosh.
ld Basin	do	2,900 1,360	3								17. 22		2.53	88.0	18					
ld Creekldendale	Yakima. Klickitat	2,600 1,600	3	34 6		52	3	20	21	22	2.60 3.38	+ 0.71	1.20 0.98	25.5	9	10 7	12	17 12	w.	J. W. Anderson. Klickitat Co. Abstract Co.
anite Falls	Snohomish	397	9	34.0		9.0		20			7.86	+ 0.71	1.00	0	13 21	1	8	23	w. e.	C. H. Cleaver.
ma Diana	Wahkiakum										*****			50.2		ii	4	15		Brank Fushnel
ler	Klickitat	2, 200	3			are a	and a second													P TRUE K INSTITUTE.
ays River	Klickitat Benton Adams	2,200	3			60 50	2† 2†	16 15	19†	29 26	0.46		0.20 0.22	0.5	4	8 5	15	8 20	sw.	Frank Kuehnel. Francis Lee Bash. Dr. A. V. Marion. Mrs. S. J. Hill. Mrs. Theo. Wheeler.

TABLE 1.—Climatological data for December, 1912. District No. 12—Continued.

			years	Tem	perature	, in o	degre	es Fah	renh	eit.	Prec	sipitation	, in in	ches.	days,		Sky		direc	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy day 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	N u m b e r o f cloudy days.	Prevailing wind d	Observers.
Washington-Contd.																				
Kennewick Kent Kettle Falls Kiona Kosmos.	Stevens	368 53 1,265 430 775	17 3 7 6	30.2	- 2.6	63 53 48 ¹ 76 61	3 18 3 3 8	8 26 10 17 25	20 5 21 8† 9	40 22 23 40 34	0. 29 6. 28 2. 30 0. 52 10. 06	- 0.77	0.08 1.28 0.33 0.30 2.72	0.5 0 16.0 0 8.0	6 17 11 3 20	6 2 9 15 3	15 4 8 10 22	10 25 14 6 6	sw.	K. E. Reed. A. O. Jeffries. Harry H. Cole. F. S. Hedges. J. A. Ulsh.
a Center	Clarke	250 1,400 2,171 2,235	15 3 3 4	37.9	- 1.8	52 56 41	171	25 22 16	9 21 21	30 24 14	8.48 1.96 10.10 9.92	+ 0.15	1.57	0.9 2.5 85.5 86.5	10 18 20	3 11 1 5	6 2 6	19 14 28 20	sw. sw. nw. w.	Joseph Brothers. M. E. Schreck. U. S. Reclamation Service. Do.
akesideaurel	Klickitat	2,479 1,116 1,900 1,644	21 3 2 3	32.4 27.4 45.0	+ 2.4	54 49 60	13 10	18 8 35	20 21 21†	25	15.07 1.39 8.23 1.29 11.72	- 0.66	0.60 2.60 0.18 2.22	134.0 10.0 29.0 12.5	9 17 14 26	8 8 8 3	14 18 1 1 13	17° 14 5 22 15	w. e. w. se. e.	W. H. Van Meter. Mrs. Minnie E. Strout. Mrs. J. S. Myers. U. S. Enginear Corps.
ongmires Springs ost Creek lcConihe lcCumbers Ranch	Okanogan	2,800 3,125 1,072 2,182	3 1 2				3	13	25†		0.60 0.51 6.70		0. 20 0. 16	7.0 4.5 29.0	4 6 10	5 12 11	17 7 8	9 12 12	se. n. s.	P. H. Leese. Paul M. McConihe. Mary McCumber.
foses Lake	. Benton	1,070 307 5,000 1,000 2,400	1 12 1 20 2	32.6	+ 2.1	65 51 58 44	3 27 3 3	21 28 13 11	10 24 9† 19	26 19 31 23	0.64 0.53 5.54 0.31 3.64	- 0.74 - 0.80	0.50 0.13 1.70 0.10 0.55	2.5 0 2.5 0.5 24.0	3 5 15 6 14	19 0 11 7	4 2 11 9	8 29 9 15	nw.	H. M. Flemming. G. H. Mottinger. Wm. M. Dorr. H. B. Scudder. Chas. M. Talmadge.
orth Headorth Sundaleorthportorth Yakima	Pacific	1,350 1,070	10 3 13 3 9	37.2 27.5 32.4	- 0.1	60 56 42 56	8 3 18 2† 3	35 18 9 16	24 9 20 8†	14 22 27 28	7. 18 1. 86 1. 67 0. 36	- 0.30 - 0.27	1.67 0.65 0.26 0.10	0.5 17.0 2.1	9 14 7	6 15	7 16 5	9 11	e. nw.	U. S. Weather Bureau. Ruth Shepard. W. F. Case. Albert Bender.
lgaly mpia mak	Lincoln	1,540 50 45 850 922	22 34 3 2	40.6	+ 0.1	52 50 52 51 50	3 1 4 3 5	9 30 29 11 18	21 19 8 21 22†	25 13 17 26 29	1, 26 5, 05 10, 59 0, 34 1, 05	+ 0.24 + 0.91	0.32 0.62 2.52 0.10 0.40	4.5 1.5 0 2.1 4.5	10 16 19 6 7	8 3 4 10 16	17 10 5 7 4	18 22 14 11	SW. 98. SW. SW. SW.	H. Rieke. Cecil S. Willis. M. O'Connor. Saint John Umbrite. M. C. Jackman.
eola omeroy ort Crescent ort Townsend	Garfielddo	5,000 1,500 259 80	3 20 17 22	42.0	0.0 + 1.2 + 0.8	51 50 54	29 2 10	17 30 33	21 5 25† 10	17 16 12	3.11 1.22 6.62 2.35	- 0.26 - 0.33	0.53 0.40 1.47 0.43	21.8 T. 0.2 0	16 7 21 13	13° 2 1 5	5° 6 1	25	SW. W. S. Se. W.	Samuel Gruell, sr. Peter McClung. U. S. Weather Bureau. F. Plummer.
osserllmaneets River	. Whitman	661 2,550 16 300 2,628	20 1 5 12	31.8° 41.9¢ 40.3 25.2	- 0.9	59 51° 50° 57 39		10° 31° 29 3	21 8† 21 19	26 25	1.98 17.49 25.28 1.33	- 0.95	0.69 4.30 0.42	1.0 6.0 0.2 0 12.5	12 26 12	13 8 4* 5 10	8	18 20	SW. S. SW. DW.	E. L. Capps. State Agricultural College C. A. Bullard. A. V. Higley. Geo. B. Stocking.
ex Creek	Adams	1,135 1,825 1,910 2,425	5 13 6 20	31.0		50	3	24 14 12	21 21 21 21	12 21 26	5. 41 3. 03	+ 1.53	2.00 1.86	9. 5 7. 0	8 5	15	5 3	22 11 22	sw.	James W. Nicol. Agt. N. P. Railroad. P. M. Ramsey. Hans Mumm.
assells Ranchdro Woolleyxprong.	King Skagit Klickitat	2,870 123 38 1,240	3 21 15 5	41.6 39.0	- 0.2 + 0.4 - 1.6	51 58 55	17 3 3	32 23 17	18 8 10	12 20 24	1. 67 4. 43 6. 47 1. 42	- 0.77 - 1.61 + 1.11	0.73 0.93 0.70 0.30	T. 0.2 0	11 17 23 9	6 1 6 11	7 2 6	23 23 14	90.	U. S. Weather Bureau. Mrs. H. L. Devin. C. E. Comstock.
agit Power Dam nohomish noqualmie Falls noqualmie Pass	. Snohomish	510 55 667 3,000 2,200	18 13 3 3	40. 0 39. 3	- 0.5	50 49 42	3	28 27 - 2	7† 6† 21	20 20 30	5. 64 10. 10 3. 88		0.80 2.04 0.75	0 0 177.0 54.0	14 24 23 14	8 5 2 11	3 0 4 11	20 26 25 9	90. n.	James Bylling. O. N. Wiswell. J. R. Westcot. G. M. Snyder.
outh Bend pokane ate University tokes Ranch	Pacific	140 1,943 170 2,670	17 31 3 3	41. 2 32. 2 41. 7	- 2.0 + 1.4	54 49 49	11 3 2†	29 17	7† 21 8	21 17 8	16.61	+ 2.29 -1.09	3. 90 0. 49 0. 97 0. 65	T. 9.1 45.4	21 14 21 14	11 6 6 7	5 2 15	15 20 23 9	W. SW. S. SW.	Mrs. Winnifred Buckingha U. S. Weather Bureau. State University. Chas. W. Gunn.
imner	Yakima. Pierce. Clallam Yakima.	77 740 213 86 2,313	17 26 27 3	31.0	+ 1.6 + 0.3 - 0.3	58 61 53 51 49	18 2† 17 17 17 2	16	10 7 27 25	30 16 12 20 29	0. 32 6. 77 12. 15 3. 48	- 0.56 - 2.44	1. 65 0. 11 1. 61 1. 39 1. 60	0.3 3.0 0.2 18.2	16 6 19 25 14	16 1 2 12	8 9 9 2 8	20 7 21 20 17	s. w. sw. e. w.	U. S. Reclamation Service U. S. Weather Bureau. Do. Clarence Clements.
ouchet ouchet Ridge rinidad ancouver ashon Island	. Columbia	556 2,500 900 100 40	5 3 8 37 23	32.6 41.1	+ 2.4 - 0.1	55 54 49	30 2 18†	16 11 27 32 17*	25 8† 19	25 23 13	0. 63 3. 23 0. 64 6. 10 7. 45	- 0.52	0. 17 0. 87 0. 20 1. 92 1. 17	20.3 5.0 T.	6 16 7 18 25	14 7 12 3 6	8 6 7	9 21 13 21 24	SW. SW. e. S.	D. M. Dorrance. Maud E. Bernard. J. C. Wheeler. A. A. Quamberg. Gertrude McClintock.
ahlukeallacealla Wallaashougal.	GrantOkanogan	410 4,000 1,000 650	8 3 28 12 22	35. 9° 39. 0 40. 0	+ 3.0 + 0.3	61° 62 52	3	23	9	27° 24 16	0.60 0.86 0.62 7.18	- 1.48 - 0.40	0. 24 0. 19 0. 23 2. 00	8.5 0.2 T.	5 10 6 22 8	10 10 10 9	13 16 6 2	8 5 15	S. SW. W.	F. C. Koppen. G. A. Wallace. U. S. Weather Bureau. F. M. Grout.
aterville enatchee enatchee (near) hile Salmon ilbur	Douglasdododo	2,624 1,169 325 2,203	13 1 13	26.6* 33.4 30.6	+ 0.8 + 2.7 - 0.3	45a 53 50 47	29† 2 3 3	5ª 11 17	22 25 21 23	29a 29 26	1.90 2.97 2.28 0.72	- 0.07 - 1.42	0.38 1.46 0.69	15.6 13.0 15.8	5 9	11a 20 7 5	6	13° 10 18	n. w.	O. R. Hopewell. A. A. Piper. Geo. A. Pitcher. R. J. Reeves.
ind Riverinthropacoltale	Skamania Okanogan Clarke Cowlitz	1,300 1,765 850 375	1 1 5	36.6 23.0 39.4		54 46 58	8	22 0 26	23 21† 21	23 30	15. 66 2. 35 13. 43 18. 12		3. 95 0. 56 3. 30 4. 60	3. 2 6. 0	21 17 19 24	5 7 7 5	4 3 10 3 1	23 14 21 25	SW. S. e.	U. S. Forest Service. Methow Trading Co. C. R. Miller. J. A. Williams.
Oregon.	. Yakima	800	1		*******	****			****	****	*****		*****	*****		****				
lbanylpineshlandstoriastin	. Jackson	212 350 1,963 16 4,250	30 15 28 51		- 2.4 - 0.9	54 56° 59 54	29 3 29 9†	26 224 20 32	8 9 8 7	20 20d 28 16	5.78 9.06 3.62 12.39	- 1.49 + 0.37 - 0.16	0.82 1.20 1.15 3.15	0 0 2.0 0	23 18 13 21	30	9 14 3	16° 111 23	sw. nw. sw.	F. M. French. J. D. McPherson, jr. G. G. Eubanks. Irving Club. U. S. Forest Service.
aker. ay Cityendlack Butte	Baker	3,466 14 3,629 1,200	1 22 18 7 11	27.2		48	3	24	26	28	1. 25 8. 65	- 0.28 - 2.01	0.41	4.0	13	8	8	15	se.	U. S. Weather Bureau. Bend Bulletin. Wm. Harris.
lalock	. Gilliam	237	14 2 1	38.3° 31.0	- 2.3 + 1.1	64° 51		22.	9† 27	21° 32	8.65 1.63 0.66	- 2.01 + 0.01	0.40	T. 3.0	7 3	3 12	3 8	25 11	w. nw.	Geo. W. Long. A. B. Cox. E. V. D. Paul.

Table 1.—Climatological data for December, 1912. District No. 12—Continued.

			years	Temp	erature	, în d	legre	es Fah	renh	eit.	Prec	ipitation	, in inc	ches.	days,		Sky.		direc	
Stations.	Counties.	Elevation, feet.	Length of record, years	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy of 0.01 inch or mor	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Prevailing wind d	Observers.
Oregon—Continued.	Hanney	4 157	21	05.0	0.4	40	104		000	25	1 10	0.09	0.95	11.0		10	1.	7		I C Walasma in
ascade Locks	Harney Hood River	100	21 22	39.24	- 0.4 + 0.7	48 55 f		- 2 29	26	35 20 f	1. 19 13. 30	- 0.03 - 3.26	0.35 3.37	11.0	22	10	14	7 21	w.	J. C. Welcome, jr. Val W. Tomkins.
azadero	Clackamas Lake		3 5	40.6		55 50	29 11	- ²⁷	26†	25 51	8. 44 0. 44		1.98 0.17	0.2 2.0	22	6	15	24 10	80. W.	Alf. Drill.
iffondon	Gilliam		5	20.0		30	11	- 6	20	91	0. 44		0.11	2.0		0	10			John C. Green. C. H. Williams.
orvallis	Benton	266	24	41.6d	+ 0.6	574		264	9	18	6.52	- 0.30	0.90	0	15	2	4	25	S.	Oreg. Agricultural College
rescent	Klamath		18	26. 2 33. 8	- 2.9	53	9 29	- 13 4	26 21	58 30	3.39	+ 0.16	0.49 0.36	33.2 1.5	16 11	13	6	14 24	sw.	U. S. Forest Service. Dr. J. Campbell-Martin.
ayvilleeadwood	Lane	350	2	42.0	- 2.0	55	29	30	9	19	14. 10	7 0.10	2.32	0	18	4	6	21	8.	Jos. Slemmons.
oraville	Columbia		10	38.0	+ 0.1	51	29	24	9			+ 3.59	3.21	3.0	22	5	7	22 22	80.	Jos. Hackenberg.
raincho	Douglas Umatilla	300 625	10	41.8		59	29	29 16	23 9t	19 30	7.52		1.27 0.17	0	18	13	7 2	16	nw.	Ira Wimberly. R. B. Stanfield.
lla	Morrow		8					10			0.10					10				Carl F. Troedson.
ugene	Lane	449	22	43.0		62*	3	27	26	25ª	4.26		0.81	0	16	2	2	27	8.	Paul G. Bond.
airvieworest Grove	Coos Washington	142 220	16 23																	- Wm. Bettys. - Pacific University.
ardiner	Douglas	. 72	23								7.66	- 4.67	1.45	0	18					Wm. S. Angus.
lendale	do	1,441	8	42.3		59	2	23	22	29	4.14		0.80	3.0	11	9	14	8	nw.	B. J. Simpson.
lenoraold Beach	Tillamook		23	45.6	- 2.3	60	7	32	21†	20	7.91	- 4.13	0.90	0	18	ii	17	3	8.	Mrs. Jennie A. Reeher.
rants Pass	Josephine	956	24	38.2	- 1.6	58	29	22 14	21	21	3.09	- 1.65	0.52	T.	16	3	8	20	SW.	John B. Paddock.
rass Valley	Sherman		11			55	2	14	10	30	1.88		1.05	2.5	5	9	3	19	w.	Agent OW. R. & N. Co
urdaneeadworks	Umatilla Clackamas	3,500	10	36 39.1		65 58	27	42 29	13 26	35 22	0.47	+ 0.69	0.20 2.95	5.0 2.5	20	7 5	11	13 25	S. SW.	Miss Belle Ely. Portland Water Works.
eppner	Morrow	1.950	22	36.5	+ 1.5	59	3+	18	10	26		- 0.60	0.15	T.	14	3	19	9	w.	Frank Gilliam.
ermiston	Umatilla	451	5	36.2		65	3	12	9	33	0.45		0.15	0	7	9	16	6		C. W. Kellogg. Carl T. Hubbard.
ermoso Rioood River	Crook	2,110	22	37.3	+ 2.0	65	1	24	21	32	7.75	+ 0.54	2.00	0	15	8	6	17	w.	Edward W. Birge.
ood River No. 2	do	485	1	37.8			2	26	21	21			2.26	4.0	18	11	3	17	W.	W. H. Lawrence.
ood River No. 3	do	620	1	37.4		54	3	24	9	22			2.30	6.0	15	7	14	10	w. nw.	U. A. Newman.
ood River No. 4		850 2,165	111	31.4		54 50	1	23 8	21 30	20 25	8.79		2.55	7.18	17	10	1	20	nw.	P. L. Smith. O. R. McNabb.
eksonville	Jackson	1,640	24	35.2	- 2.6	55	29	19	8	29	2.93	- 1.75	0.58	T.	12	4	5	22		
eph	Wallowa		23	20.0	+1.0	49	30	5	27	27		+ 0.70	0.40	17	11	9	0	22	S.	E. Britt.
amath Agency	Klamathdo		23	30.8	- 1.8	54 48	2† 3†	- 3	26 26	38 31	3.40	+ 0.80	0.80	26 18	10	18	5	8	w. nw.	F. F. McCully. N. D. Ginsbach.
Grande	Union	2,874	24	32.4	+ 0.3	59	3-	11	22	29	2.28	+ 0.22	0.31	20.5	17	8	7	16	nw.	W. A. Worstell.
keview	Lake		29	29.3	- 0.7	47	111	7	20	31	0.89	- 1.31	0.27	4.3	8	9	3	19 20	W.	C. C. Gott.
cKenzie Bridge	Yamhill		11 25	40.6	-1.3 + 0.1	51 54	29	18 27	21†	25 27	7.95	+ 0.72 + 0.21	1.57	т.	23 19	8	3	26	SW.	Geo. Frissell. M. E. Pettit.
arshfield	Coos	34	11	43.9		66	8	27	7†	34	8.44		1.02	0	23	10	5	16	SW.	U. S. Weather Bureau.
eadow Brook Ranch .	Hood River		1 2	38.3		53 58	30 29	24 20	9 22	20 30	9.01 2.06		2. 45 0. 32	3.2	17	10	13 11	8 16	sw.	John W. Palmer. U. S. Weather Bureau.
edford			7	30.7		96	20	20	22	30	2.00		0.32		14	4	11	10	Mw.	U. S. Reclamation Service
etolius	Crook	2,525	2			52b	3	12	7†	31	1.30		0.64	0	4	20	0	11	SW.	W. E. Lottman.
ikkaloiramonte Farm	Gilliam		6 24		- 0.4	53	29	26a	81	20*	6.57	+ 0.27	1.65	0	21	7	3	21	sw.	Frank Little. G. Muecke.
ount Angel	Marion		26	41.0	- 0.4	59	18	27	26	20	6.54	- 0.83	1.00	0	19	6	3	22	8.	Dr. Urban Fisher.
ount Hood	Hood River		1	33.9		51	2†	18	21†	23	8.91		2.70	11.1	18	8	10	13	SW.	Isaac Beal.
usickewport	Douglas	5,000	3 25	43.6	- 2.8	49 55	12 8	18 31	21 21†	26 16	9.64	- 1.09	1.82	95.0	17 19	13	10	18 16	SW.	Alex Lundberg. Wm. Mathews.
dell	Hood River		1																	T. A. Decker.
rtley	Wasco		1 9			51.		24*	9	204	5.38		1.82	13.7	11	7.		1	W.	L. D. Firebaugh. C. M. Sain.
aisleyarkdale	Hood River		2			54 50	3	9 17	26 21†	34 28	0.63 7.89		0.15 2.70	1.5	15	15	6	10 22	SW.	S. G. Babson.
endleton	Umatilia	1,070	23	37.8	+ 1.2	63	3	16	9	29	0.73	- 0.77	0.19	T.	9	10	3 7 2	14	w.	E. F. Averill.
lot Rock	Clackomaa	1,817	4	36.0	0.5	58	29† 19	12	9 26†	30	1.14	1 2 70	0.30	T. 79.5	8 19	10	2	19 23	SW.	John P. McManus. E. Coalman.
ompeii	Clackamas Multnomah	3,879	17 42	32.2 41.5	-0.5 + 0.2	62 54	29	18 30	201	18	8.01	+ 3.72 + 0.67	3.45 2.23	T.	21	2	2	27	SW.	U. S. Weather Bureau.
ort Orford	Curry	. 80	7																	L. D. Loucks.
rairie City	Grant		16	28.8		51	3	0	21	36	1.39		0.23	13.5	14	9	6	16	nw.	A. M. F. Kirchheiner. Geo. Summers.
ospect	Jackson	2,800	6	34.6		59	8	16	26	35	6.76		1.16	11.7	17	8	5	18	ne.	E. G. Trumbo.
amsey	Wasco	. 1,350	11	32.4		52	2† 3 29 3	17	10	30 33 20	3.62		0.98	6.3	11	10	8	17	w.	Mrs. Iva. B. Collins.
angedmond	Grant		4	27.3 37.8		50	30	28	21 5†	33	2. 25 1. 13		0.50	4.0	10	13	19	14	w.	. Mrs. Emma Arbuckle. John Tuck.
chland	Baker		11		+ 1.8	54 51	3	49	221	32a	0.38		0.10	3.0	5	6	12	18	w.	L. G. Morgan.
verside	Malheur	3,000	13	36.3		50	3 29 29† 13†	1	22† 25 27 9	36	0.48		0.20	1.0	4	12	4	15	w.	Mrs. Leah Fairman.
seburglem	Douglas		34	41.4	- 0.5 - 0.3	60 54	29	27 27 - 15	27	20 22 42	4.16	- 0.76 - 1.23	0.69	0	17 19	5	9	20 25	S. SW.	U. S. Weather Bureau. M. P. Baldwin.
neca	Grant		1	20.0	0.0	43	13+	- 15	201	42	1.21	1.20	0.32	15.8	12	13	4	14		E. J. Southworth.
ver Lake	Lake	4,700	15	26.9	- 2.9	56 57 43	11	- 2	20† 27	43	1.88	+ 0.76	0.60	15.0	6	15	12	4	w.	G. W. Marvin U. S. Weather Bureau.
skiyouarta	JacksonBaker	4,115	21	34.7 27.8	+ 0.5	57	8 8t	20	5	26	4.55	- 0.64	0.89	20.5 31	14	14	7 6	15 11	8. W.	J. A. Wright.
afford	Clackamas	400	21 16	45.0	+ 4.3	58	8	5 27	24	29 31	6.54	- 0.61	1.71	0.5	24				sw.	John P. Gage.
e Dalles	Wasco	. 112	38																	
natilla	Lincoln Umatilla	75 340	22	36.9	+ 2.0	63	3	27 18	20	26	12.30 0.44	+ 1.93	1.85 0.16	т.	16	11	11	9	SW.	C. B. Crosno. Mrs. Helen T. Duncan.
nion	Union	2,787		31.7	+ 2.0	50	3	8	21	28	0. 52		0.10	1.6	11	8	9	21 14	S.	Robt. Withycombe.
de	Malheur	2,242	20																	Robt, Withycombe. H. P. Osborne. Geo. Howe.
mda	Harney	3,506	1	39.1		58	8	97	20	25	10.29		1.40	3	20	10	1	20	w.	W. H. Pendell.
aldo	Josephine			39.1				27	20	20	10. 20		1.40		20	10	1	20		. M. M. Lewis.
allace Orchard	Polk	. 170	3	39.6		54	29	24	8	20	7.07		0.92	0.	18	0	3	29		. Chas. A. Park.
allowaamic	Wallowa Wasco		9	28.0		50 55•	29†	- 5 12e	27 21	27 32•	1.59 0.62		0.24	17	17	6	3	21 20 •	nw.	L. J. Coverstone. A. J. Swift.
armspring	Crook	1,500	10	04.2		00				0.00	0.02		0.02			0.		20		. Claude C. Covey.
estfall	Malheur	3,000	1																	Claude C. Covey. H. M. Gilliam.
estonilliams	Umatilla Josephine	. 1,800	20	35.0	+1.0 -1.4	57 60	3 29 8	18 19	20	29 27	2.51	- 0.10 - 0.69	0.88	T. 4.2	11 13 7	11	8 5	22 15	se. w.	M. A. Baker. Francis J. Le Roy.
							434	114		1 44	46, 116		1 11. 74							

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inoh rain or melted snow

Table 2.—Daily precipitation for December, 1912. District No. 12, Columbia Valley.

Stations.	Watershed.		1					1										onth	_								-	1		-			7
Durions		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Montana.																																	
naconda	Missoula																											· · · ·			****		
utte	do		• • • •	.10	.10	T.				T.			-01	. 05		T.	T.	. 02	23	. 05	.02	T.	.02	.20				T.	.50				1.
olumbia Falls	Flathead Bitter Root.		. 02	.25	.02									.15	.01															. 41	.02		1.
ayton	Flathead Missoula			. 20									. 05	. 05	.01		••••			- 08	. 05					.02		****	.08	. 05	. 25	т.	0.
eer Lodgeast Anaconda	do																																
ortine	Kootenai		T.	14							T.	.03		. 03	.03	.10	. 03	T.	.08	· T	T.			. 15 T	.12		****	Т.	T. T.	. 22	.02		
amilton	Bitter Root. Missoula			T.	.13	. 15					.10				.01	.20	.02	.21	.05	.01	.20								. 02	.05 T.	.10		1
[augan	do		. 40	. 60									. 02	. 46		. 00	. 00								10	. 16				1.10		.36	
leron	Columbia Flathead	. 02	.03	.80	.23 T.		****					.02	T.	.01		.03	. 38	.02	T.		. 05			T.	T.	T.			T.	.14		.01	0.
ibby	Kootenai	T.	. 05	.27	.06							. 02	T.	. 06	.08	. 15	. 11	02	7.3		. 01		Sec.	. 05	.12	. 02	T.	.03	.07	. 32	. 46		0
ost Creek	Missoula		T	.02	T	.08	.06				.05	.03		.01	.03	.03	T.	. 05	.10	.06	. 05			T.	. 03	. 01				. 05	.18		
phir	do				. 30	. 04					.11			.10	.09		37	30	. 344	20			. 35							.05			
vando	do	.04	. 05	.15	T.						.00	.03 T.	T.		T.	T.	T.	T.	. 10	.10				.00	T.	.02	1		.05	.10	. 20	. 01	0
hilipsburg	Columbia		T.									T.	T.	. 05		. 15	. 05	.12	T.							T.	T.		T.	. 20			0
leasant Valley	Kootenai		. 20	. 50									****	T.		. 20	.10		.08		.08			. 10	. 15	. 02		. 02	.00	. 30			0
t. Ignatius	Flathead			.01	. 02						. 01		.04	. 10	T.	. 01			.12	.01	. 01					. 01							0
altese	Missoula	. 47	. 18	. 68	.36							· · · ·		. 68		1.14 T.	.76	T.	.60	01	. 20	T		. 64	05	.17			. 98 T.		1.87 T.		
tevensville	Bitter Root. Columbia	.02	T.	32	.03	****		****		****		.04		.11	.06	T.	.16	.25	.15					T.	.14				.10	. 28	. 55	. 47	2
rout Creek	do	.10	.09	.15	.10	.14					T.	.06	T.		T.	T.	. 20					T.		. 10	. 05				.16		1.30		3
Villow Glen Stock Farm.	Missoula			. 20	T.						• • • •				T.	****					****			****			****	****	****	1.	****	. 00	0
Wyoming.																																	
fton	Snake	12		05													05	03	.02	.06									.06	.10	.15	. 07	0
Ita	do	.17		.00	.21												. 03	.18			T.								. 05			.28	1
ochler River	do						1			1																				.21	.07	.10	0
Sedford	do	T.	.01	.09	.07					****					.08		. 78		.10	00					25			1	- 04	.27	.30	.20	2
nake River	do	. 39	.05	.20	.18		T.				. 02	T.		. 01	. 31	. 09	. 36		.02	T.			T.	. 15	. 20				.25	. 50		. 38	3
Nevada.											1	1																					
																				-					m					T.		T.	0
an Jacinto	Snake															****	.10		****		****			****	T.			****	****	I.	****	1.	0
Utah.																																	
tandrod	Raft						1																										
landrod	nait						****		****									2															
Idaho.																																	
Albion	Snake						****										10		01									1	.30	****	. 10	. 40	1.
merican Falls	do		1				-	1	1			1	1		1																		
rrowrock	Boise	1	. 04												. 02	T.	. 60	. 06	. 03		. 09		·		****				. 02	T.	. 24	.01	2
lackfoot Dam	Blackfoot																										1::::						
lackfloot Dam	Payette Boise Kootenai	T.	. 08		. 21										. 63	. 21	. 27	T.			. 32			T.	T.	. 14				. 22	.06		2
oise	Boise		. 01	. 03	T.									. 25	. 05	. 01	. 18		. 01		. 10			T.	. 01	. 04		1.	****	.00	.00	. 03	
onners Ferry	Rootenai		. 12		. 22	****	****		****	****					. 57	. 26	. 52		. 11		. 11	. 03		. 01		. 12			. 12			. 27	3
uhl	Boise Boise				T.										T.	T.	. 20		T.		T.	. 10			T.	. 10	T	T.	T.		. 15 T.		0
aldwell Exp. Sta	Boisedo		. 03		. 04									10	. 28	. 02	. 10		. 01	. 03						. 05			****	. 37			0
ambridge	Weiser		T.	****	. 04										. 68	. 32	. 60							T.		. 10				. 55	. 40	. 30	
edar Creek Dam	Weiser Snake				. 25	. 10									01	T.	. 30													. 06	. 40	. 16	0
hesterfieldlarks Fork	Pend Oreille	.02	28	80	. 04	****	****					. 03	.01	. 14	. 25	. 15	. 30	. 06	. 16	. 01	. 15			. 50		. 01		. 03	. 07	. 73	. 61	. 40	
lyde																													10	78	T	. 25	3
ounciluldesac																			1		1 (90)	18			1	De work		- anna		. 22	- UB		0
	do			. 12								. 10	. 25	. 55	. 15	. 35	. 37		. 09		. 36					. 08	3			. 70		. 80	3
Peary	do		70	· · · ·						****	T				08	10	32		T		. 05		****		****				****	. 25	. 12	. 09	1
mmett II	Pavette		1.	.04	. 05											. 04	. 26				. 10				. 15				. 10	. 05			0
OLINOY	Salmon																								****			****	****		. 15		0
arnet	Salmon Snake do. Wood-Malad St. Joe			T												. 05	. 40					T.				. 05				. 25	. 25		1
ooding	Wood-Malad														. 16		. 31				T.	70		10	T.	. 06		05	63	. 10	1.02	.45	9
rand Forks	St. Joe	. 02	. 71	1. 23	. 13	T.						. 07	. 05	. 52	. 56	. 28	. 52	. 37	. 25	. 00	. 22	T.		- 19	. 20	. 00	1	. 00	. 00	. 60	1.00		
randview	Snake Boise		. 12	. 19										. 62	. 07	. 58			. 09	. 02	. 13			. 08	. 06				. 08	.71	. 15	. 21 T.	3
uffey	Snake				. 12										10	10	. 05		.01			. 25 T		T.	T.				T.	. 08	. 36	. 34	1
faileyfollister	Wood-Malad				. 05		****						****	T.	. 18	T.	. 01	T.	.02	. 09	. 02	. 33			T.	. 00	5		T.	. 04	. 15	T.	0
otspring	Snake. Wood-Malad Snake. Brune iu													T.		T.			T.			. 04							T.		. 25		0
lotspring laho City laho Falls	Boise				10								****			08			****		. 13			****		****				. 04		. 08	0
ndian Cove	Brune iu Boise Snake do Weiser			****	. 10																									****	80	91	
dian Valley	Weiser			. 02	. 08										. 30	. 31	. 20					. 11	****			.00		****	****	****	. 32	. 31	1.
win	DIRGINO,														10000		0.000		10000	1	1			01					1 16	1877	1 (3)(2)	192	KI 3
ellogg ilgore	Lost R. Reg.		. 02	. 10	. 10		****																							80	****	24	1.
irkham	Payette		. 36	. 10	. 12									·	. 24	. 22	. 44		. 15	. 11	. 05		. 15	. 10		.00			****	. 10	T.	- 04	10
ooskiaakeview	Pend Oraille	10	19	. 21	90				****			.00	. 12	, 20	14	.06	. 10	. 12	. 36		. 18							. 26	. 20	1.80		. 60	1
andore	C. d'Alene Lost R. Reg. Payette Clearwater Pend Oreille Snake	. 10	. 09	. 20	. 60	. 07							T.	. 40	. 53	. 45	. 45	. 05	. 25	. 04			. 47	. 04	. 18	.0		T.	. 10	. 50	1. 10	****	1
eadore	Snake. Salmon Clearwater Boise. Salmon Lost R. Reg. Boise. Weiser													19					00				****	.00					****	. 06		T.	1
ewistonittle Camas	Boise		. 03	. 08	.00		****				****		. 02	. 17	. 18		. 36	. 01	. 02						. 03	.07	7			. 34	. 28	. 11	1
oon Creek	Salmon		. 03	. 01	. 18	. 02								T.	. 16	. 14	. 12		. 14	T.	T.			. 03	. 15			01	-11	10	- 27	. 25	10
lackayleridian	Lost R. Reg.													· · · ·		. 01	. 01	7	. 01	T		01		****		0	7	.01	T.	. 10		. 10	. 0
	HOIGO	1	. 02		. 03		1					food	1	I L.	1 . 40	1 . 04	0 . 44	4.0	. 04		1 0 1/6												

TABLE 2.—Daily precipitation for December, 1912. District No. 12—Continued

															I	ay o	of mo	nth.															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Idaho-Continued.																																	
Middle Fork	Clearwater			. 18	. 24											. 45	. 22				. 25						-			. 26	. 05		1.6
Müner	Snake	. 08					1	1		1							. 36				. 17					. 18				. 06		. 10	0. 9
Moscow	Palouse		. 04		. 17									. 12	. 20	. 12	. 20		. 17		rp.	. 30			. 10	. 05			. 10	19	1.00	. 12	2.6
Mountain Home Murtaugh		.09			T.				0000						Т.		. 24		1.		1.	. 29				. 10				. 13	. 18	T.	0. 48
New Meadows	Salmon																																****
Nezperce				. 05	. 01									. 14		. 08		. 15			. 22	10								. 16			0.8
Oakley	Clearwater				.00											. 20						. 10					. 20			- * * *	. 20	. 00	0. 8
Orofino Payette	Clearwaterdodo												. 01	. 07	. 16	. 33	. 28	. 03			. 30				. 23					. 68			2.0
Payette Pierson			T.	96	T.								T.	T.	. 13	. 09	. 07				. 01	. 02			T.	. 02				. 23	. 27	19	2.0
Pine	Boise			. 20	. 09										. 40		. 70								. 02						. 30	. 82	2.3
Pleasant Valley			. 03		. 06										. 23		. 15				. 01	. 03				. 05				. 01	. 01		0.5
Pocatello	Port Neul				. 01										T.	. 02	. 01		T.		. 03	. 02	Т.			T.	T.		T.	T.	. 01	. 10	0. 2
Poplar	Snake																																
Porthill	Snake. Kootenai Boise.	. 08	. 07	. 19										. 35			. 08							. 24				. 04	. 40	. 23		. 11	1.7
Powers Ranch Priest River Exp.	Pend Oreille		. 05		. 05										. 00	. 19	. 60				. 40					. 10					. 45	. 10	2. 0 +4 8
Station No. 1.								1					****			****	****			****			****										44.0
Priest River Exp.	do									1																							\$4.0
Station No. 2. Priest River Exp.	do	. 05	. 24	55								. 08	. 06	. 35		. 11	. 18	. 03	.50		. 17			.05		. 02	01	22	. 00	1.08	. 05	. 17	4.0
Station No. 3.				1													1						2200					. 60					
Pyle Creek	Payette		. 10	. 01	. 05										- 76		. 45		. 02		. 08			T.	. 03	. 04			. 01	. 47	. 26	. 34	2.9
Rattlesnake Creek Richfield	Wood-Malad		. 01		. 11										. 48	. 01	. 54	. 02	. 04		. 08	. 01		T.	T.	. 10			. 02		. 25	. 20	0.7
Roseberry	Wood-Malad Payette Snakedo. do. St. Joe. Salmon. Pend Oreille Boise. Wood-Malad Owyhee. Boise. Boise. Boise. Boise. Boise. Boise.																. 10																
Roseworth	Snake				. 02													. 03	.03			. 08			. 03	. 01			T.	. 03			0.2
Rupert	do				T.										T.	Т.	. 03		T.		. 01					. 01			T.	. 01	. 03	T.	0.2
St. Maries	St. Joe																																
Salmon	Salmon		T.	. 09							T.				.08	T.			. 12		T.	. 05			. 03					. 10		T.	
Sandpoint Sheep Hill	Pend Orelle	. 05	. 24	. 40										. 50 T	. 10	. 05	. 32	T.	. 22		.17			. 25	. 05	. 07		. 25	.04 T.	1.00	. 25	.43	
Shoshone	Wood-Malad		.00	.00				1						T.	.11	T.	. 20		T.		T. T.	.10			T.	.06	3		1.	. 07	.02	.01	
Silver City	Owyhee		.10		. 60									. 03	. 33	. 50	1.08		. 24		.06	.18			. 04	. 24	1			. 62		. 08	4.7
Smith Prairie	Wood Malad	T	T.	.10	00									T	. 28	95	. 61	05	. 05		T.	T.			. 23					.15	.30		1.6
Spirit Lake	Pend Oreille	1.	A .		. 90									1.	. 90	. 20	. 42																
Springfield	Snake			T.													.12															. 09	0. 2
Spring Hill	Boise		. 04		.05									T.	T	. 35	. 22					. 04			T.	.10				. 05	.07		
Sunnyside	do														. 23	. 04	.17		.06											. 03	.31		0.8
Fripod Mountain	Payette		. 05		. 12										. 52	.34	.38		T.	T.	. 09	T.			.03	.13	3		T.	. 43		. 19	2.2
Twin Falls Vernon	Snake				00												.17		T			.10			T.	. 17			11	.10		T.	1.0
Wallace																	. 30	.32	. 35		. 18			. 11	. 30	. 03	3	. 0.	. 40	11.12	. 85		
Weiser	Weiser Wood-Malad			T.	.13								T.	. 03	.17	. 07	.15		T.		T.	. 05				. 02	3			. 42		T.	1.0
Wendell Washington.	W OOG-MalaG											••••			.00	T.	.17		Т.							. 12	2			.14	.30	T.	0.8
Aberdeen	Coast	04	. 29	1 55	17							94	00	1 01	95	90	1 97	10	. 49	10	00			70	. 79			. 68	00	1.98	57	1 99	12.6
Anacortes	Puget Sound	.09	. 15	. 67	-14						. 07	. 21	. 02	, 09	. 20	. 20	. 22	.11	. 10	. 10		.01	.11	.12	. 12		.03	. 12		. 44			3.9
Anatone	Snake Puget Sound		. 13	. 40				1						. 20	. 05	*	.70	.11	*	*	*		*	. 59	*					. 90	*	.70	3.7
Baker	Puget Sound	-11	. 45	1.32								. 42	T.	1.05		. 12	. 65	.39	1.14		. 24		. 43	. 59	. 22	T.	T.	.08	1. 16	. 22	31		8.9
Bellingham	do	.08	.05	.10							. 20	. 27		. 06		. 25	.30	.06					.10	.06		.11	.04	.06		.26	. 10		
Bellingham, (near). Blaine	do	. 20	.12	.70	.01							.34	. 02	. 08	. 01	. 20	. 41	.00	. 35	T.	.06	. 02	. 43	. 15	. 06	. 30	19	.11	. 20	1.09	.11	. 32	5.5
Blewett	Wenatchee Puget Sound		.10	1. 20	. 20							96	.10	. 50		. 60	1.00	. 40	.30				. 03	. 60	. 20			. 40		. 80			
Brewster	Okanogan	.02	.10	T.								.06		.14	.02	. 10	.17		.36					. 14	T.	.03	.10	.10			1.26		
Bumping Lake	Vakima								1		1	1								1				1	1		1						
Cedar River	Puget Sound Coast. Yakima. Puget Sound	. 05	. 21	. 78							m	.06	. 22	.34		. 20	. 69	. 59			. 56			.32	.16			. 52	.37	1.53	. 57	. 40	7.5 8.4
Cle Elum	Yakima	.04	.17	. 83	.07	****			1		1.	1.		.08	.02	. 32	. 60	. 00	. 42	.07	. 22			. 22	. 15	.03	00	.2	. 23	1.00	20	. 07	4.8
Clearbrook	Puget Sound	. 51	.11	. 91								.37		. 25	.01	.38	. 52	.16	. 20		.12		. 31	.10	. 09	.10	1.18	.12	.18	1.35	. 07	1.19	6. 2
Colfax	Palouse Columbia											19			.30	. 40	1 . 200	- 200					. 3911	1						. 190	1 . 00		3.2
Conconully	Okanogan	T.										. 10		. 00		. 30	. 22	. 02							.12			. 31				30	1.0
Cowiche	Yakima			T.	. 05								T.	.12	T.	. 13	. 10		. 01						. 02							. 04	0.9
Prescent	Spokane Puget Sound																																
Davenport	Columbia												.10	.35		. 65	.12						. 16							116	3	. 20	1.7
Dayton	do		. 02	. 03	T.								T.	. 19		. 26	. 21		. 03		. 02				. 09			. 04	1	.48	T.	. 12	1.4
Deer Park	Spokane	T.	.15									. 03	70	. 33		. 20	.26				. 35			. 15		T.		.11		. 90	.10	. 11	2.6
Detroit Dixie (near)	Columbia	T.	10	20	. 20							. 20	1.	. 33	. 40	. 08	.19	. 11	15		50			17	. 15	12	3	.13	. 47			1. 00	3.8
Douglas Lake	Puget Sound	. 03	.06	. 58							. 05	.14	. 01	. 08		. 23	90	0.9	36	. 02	. 21	. 01	. 03	00	. 03			.14	. 21	.31	. 02	.38	
Oryden	Wenatchee	. 03	. 07	. 60	. 03							.06		. 38	T.	. 02	.39	. 02	.08					. 08	.03	T.		.00	. 09	.84	1 .04	. 65	3.6
Duckabush East Sound	Puget Sound	.06										.16	.00	.02		25	. 25		30					.14	21		T	0	. 28	3	3 0	. 68	3.4
Ellensburg	Yakima	. 02		.03								. 03		.10		. 13	. 07		. 07					. 08	. 06			. 02	5	. 56	6 . 02		1.2
Sphrata	Columbia	****		0 00					***					1 40		1 44	1																
Forks	Yakima	. 04	- 41	2. 30	. 40						.11	.71	.12	1. 45		1.12	1. 23	. 22	. 85	. 34	. 65		. 10	1.00	1. 55			1.4				1	19.6
lerome	Columbia													. 05		. 09		. 13											. 90		8	. 38	1.6
loat Lake	Pinger Sound	1	7.5	7.53	90			1		1		1 (80)	i i	21	1 NE	1	1 1997	72	11 02	OF		1		1 49	വന) O	(A)	2.0	1.14	1.9	9 1.4	. 91	
Gold Basin				30										15			40		10	****					10			9	1 2	1	0		2.6
Goldendale	Columbia	. 03		. 12									.10	. 15	. 25	. 25	- 20							.10	.10			1.1	5 . 60	9	8 .2	.30	3.3
Franite Falls	Puget Sound	. 12	. 50	1.00								. 26		. 44	. 28	. 50	.32	. 12		. 11	. 64	.01		. 15	. 45		. 18	. 1	. 48	3 . 6	9 .13	. 80	7.3
rays River	Columbia					****	****	****	***				****			****																	
Ianford	do	T		T.				****						, 13		. 20	. 12		T.				****		.01			1	1				0.
Hanford. Hatton Huntsville rene Mountain Kennewick.	do	T.		.11								T.		.11		. 18	. 12								T.					. 25	2 .0	5	. 0.7
untsville	do	****							****			000		. 28	. 05		. 45							. 05							0		. 1.4
one mountain	4-	70	****	. 00	****			****	****			.01	T.	. 08	. 10	.00	. 10				. 00				. 00			. 0			8 .0	. UC	0.7

TABLE 2.—Daily precipitation for December, 1912. District No. 12—Continued.

Stations.	Watershed.		1			1			1	_	1				I	ay c	f mo	nth.										_					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Washington—Con.																																	
Cent	Puget Sound											. 24		.24	. 03	. 15									. 07	. 02		. 45		1.28			
Cettle Falls	Columbia Yakima	.30	. 20	.07								.10	T.	.33		.30	. 25		. 20					T.				.30		. 20		. 25	
Cosmos	Columbia	.06	. 05	1. 12	0. 48	3						. 19		.00		. 15	. 60	.14	. 95	. 12			.24		. 22	.11	. 23	.22	2.72			.24	10
a Center	do	.32	.07	. 53							T.	. 15				. 90	. 08	. 35	. 01		. 03		.30	.08	. 40	.01	. 03	.70	.80	1.57		.01	8
a Crosseake Clealum	Palouse Yakima	T.	T.	1.49	.23							T.	T. T.	.14		. 27	. 23 1. 40	.82	. 01	. 17	.02		T.	.07				T.		.91	1 10	. 12	7 -
ake Kachess	do	. 12	. 41	1.35	. 12							. 05		. 20	. 20	. 15	1.50	.37	. 60	. 20	. 23			. 53	. 19	T.		. 10	. 43	2.53	. 25	.39	9
ake Keechelus	Columbia	.06 T.	. 67	1.77	. 35	. 03	. 05			*	. 95	.08		.21		.39	1.87	.30	. 85	. 29	. 42		****	.96		.21	****	. 65	1.86	. 60	*	2.20	
akeside	do		. 02	.34								.02	.02			. 13	.70	.06		.05				. 25				.35	.41	2.60	.36	1. 40	8
aurier	Kettle	. 05	.13	. 12								.02		. 05	. 10		. 14	. 09	. 05		. 18							. 14		.14	.06		1
one Treeongmires Springs	Coast Puget Sound	. 34	. 14	. 95			T.			T.	.05	. 34	.01	.83		. 63	. 85	.07			.34		. 04	. 00	. 76	. 12	. 05	. 47	. 36	2. 22	. 20	1.76	11
ost Creek	Columbia											T.	T.	. 20		. 10	T.								T.			. 10			****	.20	0
cConihe	do	T.	T.	T.			T.					. 03	*	.16	T.	. 07	. 14		T.							. 09		T.		T.	. 02		0
cCumbers Ranch.	do			. 55 T.							T.			. 40	. 15	.50		. 30	. 10			****	****		. 10		****	*	.04	3. 15	.25	1.20	0.
ottinger	do												T.		. 12	. 07	. 13								.09			T.		. 12			0
ount Pleasant	Coast	·	T.	. 75	. 03						. 02		T.	.20		. 19	.39						. 10	. 40	. 15				. 42			1.70	
oxee	Yakima Pend Oreille	T.	.28	.36						****		.05		.08		T.	T.	4000			. 19		****	. 15	T.	T.	T.	. 42		. 10			
orth Head	Coast	. 26	. 18	.31	. 02						.01			. 42	.31	. 57	. 16				. 23		. 05	.21	. 92	. 04		. 52	. 40	1.40	. 49	.08	7
orth Sundale	Columbia	. 18	T.	. 16								T.	. 15	.21		. 23	. 28			. 15	T.	T.	.04		.09 T.	T.		.11	.08		.09		1
orthportorth Yakima	Yakima	T.		. 03							::::	.01	T.	.06		.07	.08			. 10			.09	.02	T.					.10	.01	T.	0
dessa	Columbia	T.		. 03							T.	.04	.02			.21	. 21									.06				.32	.02	. 20	1
gavmpia	Puget Sound	. 22	. 18	1 10								. 20		.34	.30	. 46	.31	15	. 36	.04	. 62			.31	. 28		.06	.30	. 42	. 39	.03	. 61 1. 30	5
mak	Okanogan	. 10		1.10								. 03				. 08	.08		. 00					. 52						. 02	. 40	.03	
roville	do											T.	. 10			. 10	. 10	. 20							. 05						. 40		1
ola	Snakedo		. 03	. 26	.06								T.	.27		.08	. 22	. 24	. 10 T.	****			****	T.	****	.02 T.	****	. 22	. 15 T.	. 28	. 53		1
omeroyort Crescent	Coast	.01	.11	1.00							.01	. 05	.02			. 19	.34	.48	.30	T.	. 13		.06	. 48	.01			. 42	. 33	.72	1.07	. 45	6
ort Townsend	Puget Sound		. 10	. 30		T.					. 05			. 05		. 07	. 18	T.	. 42		. 21			. 07				T.	.22	. 09		. 43	2
illman	Palouse	. 06		. 15	.21	T.	T.	m	T.	T.			T.	1.27		. 02	. 05	. 12	.51	. 16	. 10	T.	. 40	. 03	. 50	*	*	.10	*	. 69	*	. 05 8. 00	
neets River	do	. 50	. 99	2.60	.50	1.		1.			.08	1.39	.47	1. 47	. 42		2. 15			.09		.08			. 68						1.03	2. 15	25
public	Kettle	. 08	. 02	. 02								. 09		. 28	. 03		. 12		. 07		T.	T.						. 15		. 02		. 42	1
x Creek	Columbia	T.	.30	. 56					T.					1.86			. 25	. 40	. 50				.06						. 40	2.00		. 60	
tzvillebbertsville	do		.01								• • • •		. 02	1.80	. 22		. 16					****	.00				****	****		.00	****	. 10	0
ck Lake	Palouse																. 25	.11								. 48					. 65		
salia	Yakima		. 01	.01							T.		T.	. 22		. 25	. 20		. 02		. 03			. 05		. 03		****		.73	****	. 12	1.
attle	Puget Sound	.04	.01	. 47	T.						••••	.20		.34	.01	.38	.03	.28		****	. 15	****	T.	.20	. 25			. 28	.07	.79	. 35	. 58	4
dro Woollev	do	. 11	. 24	. 67	.09		.02					.31		.39			. 47	. 10	. 35	. 05		. 04	. 13		. 09	. 14	. 14	. 41			. 05		
agit Power Dam.	Columbia			. 10									T.	. 18		. 28		T.						. 10				. 02	****	.30	.26	. 18	1.
ohomish	Puget Sound		. 46	72					****			. 23		. 43		.33	.25		. 43		. 41	****			. 43			. 20	.25	. 55	. 15	. 80	5.
oqualmie Falls	Puget Sound	.04				T.	. 01	T.	. 02	T.	T.	.12		. 49	. 15	. 35	. 56	.02	. 63	.06	. 47	. 01		. 56	. 13	. 02		. 58	- 45	2.04	. 59	. 92	10
oqualmie Pass vders Ranch	Columbia	T.	0.5	.60				****				T.		.04		. 24	98	. 15	. 73			****		16	.08	T.		.12	.13	.75	.15	.40	3
uth Bend	Coast	.38		1.94								.15		. 78		.74	. 90	. 24	. 75	. 26	. 62			.90	1.02	.15		.84	. 25	3.90	1.01	1.00	
okane	Spokane	T.	T.	.02						T.		.10				. 25	.07	T.	. 03		. 05		T.	.01		: 02		.06		. 49	.08	.16	-
ate University okes Ranch	Puget Sound Columbia	.04	.02									. 24	.01	.34	.01	.16	. 29	.36	. 29		. 33	.07	.10	.00	.34	****	.08	.14	.19	. 65	.14	.97	5.
mner	Puget Sound											.27		. 40		.18	.74		.78		. 03	T.		. 45		.03		. 43		1.65	. 28	.60	
nnyside	Yakima	T.		. 01										.08		.11	.04								T.	T.			90	.06	.02	49	0
toosh Island	Pierce Coast	. 03									.02	.18	T.	. 36		. 23	1.16	. 46	.14		.01		. 86	. 20	.11	.35	.54	1.15		1.58	. 27	.17	6
eton	Yakima	.02	T.	.35							.01			.09	T.	. 43	.39	.05						.08	. 10			. 02		1.60	. 16		3.
uchet	Columbia		T.	T.									.08			.13	. 05	,	10	T.				T.	T.								0
uchet Ridge	do			. 09	.06			2				. 05	T.	.35		.20	. 20	****	. 10		. 31		****	. 20	. 26	.10				.10			0
ncouver	do	.07	T.	.34	.05							.07		. 60	.12	. 19	. 50	.14	. 23										. 32	1.92	.28		6
ancouver shon Island	Puget Sound	.12	. 32	. 63	.02	T.	T.	T.	T.				.01	. 49	.07	. 19	. 63	.06	. 50	.02	.03	.02	.01	. 26	.18	.02	.01	. 33	. 53	. 45	1.17	1.10	0.
ahlukeallace	Okanogan									****	07			. 23	.02	11	.10		14		****	****	****	****	.06	.02	****	****		.03		. 19	
alla Walla	Puget Sound Columbia Okanogan Columbia dodo	T.		T.									. 02	.19	T.	.12	. 05		T.		.01			T.	T.			T.		. 23	T.	T.	0.
ashougal	do	. 03	. 08	. 40	. 25									. 03	. 08	. 55	.12	. 48	. 45	. 05	. 25	.06	- 10	.35	. 40	. 23	****		.08				
aterville	do	T.	****	. 22						****		.08		. 20	26	. 30	. 13				****			1.	. 38	.31	****		. 73				
enatchee (near)	do		****	. 42				****				.07		.14		.34	. 18		. 13					T.	.08			T.		. 69	T.	. 23	2.
hite Salmon	do																												****		****		0.
ilburind River	do	T.	. 12	1 84	18							. 05	95	17	. 25 1. 24	. 15					10	24	. 40	10.5	. 40	20		.80	.30	3. 95	1.42	.741	15.
inthrop	do	.05	.07	. 22	. 13	****				****		.01		.05	.01	.10	. 23	.10	. 46	. 01			T.		.17	T.		.06	.06	. 56	.14	. 05	2
colt	do	. 04	. 25	. 90	. 26							.16		. 70	. 19	. 44	1.02	.16	. 85					. 90	. 35	. 20		. 72	.39	3.30	.90	. 70	13
lelah	do	.16	.84	1.46	. 25							. 32	.04	. 85	.31	- 48	1.39	. 48	. 82	. 12	. 43	. 10	.00	.05		. 40		. 95	. 49	4.00	. 00	1. 90	10
ah	Takina						****			****					****																		
Отедоп.																																	
	Willematt	00	0.0		20	00					07	10	00	20	20	20	.19	.23	.04		.06	1	.04	.15	.47		.05	. 57	. 21	. 82	.74	. 39	5
oanyingham	Willamette Deschutes	.03	.05		. 39	. 03		****																									
oine	Willamette	T.	T.	. 41	.37	T.					T.		. 05	. 62	. 61	. 28	. 95	. 19	- 56	T.				. 27					. 31			1.20	
a River	SE. drainage			T.	.03								91		T.	. 22	25	06	.01					T.	. 10	****		****		1.15	.07	.15	
hlandtoria	Rogue	14	. 20	. 11	.01						****	43	A	.52	.48	.50	. 56	. 10	. 51	.10	. 51			. 50	.75	. 05		. 56	. 61	3.15	.31	1.31	12
stin	John Day		. 20	T.	. 39	.12									T.	T.	. 90				. 22				T.	T.	. 30	70	T.		.75	. 20	
ker	John Day Snake		T.	. 02	T.							T.	T.	.12	. 01	. 15	. 24		. 04	T.	. 02			. 18	. 02			T.	.01	. 40	.02	.02	i
y City	Coast Deschutes				****							.02	.18	.12	.10	.05								***				.02	. 08	. 22		.14	1
ar Valley	SE. drainage.	. 10		. 25		.70								T.	. 40	.80	. 60	.08	T.	. 25								. 08					3
					.12						1.10			. 33		. 13	.32				. 28	.17		49	08	10	****	67	20	1 19	67	1.57	10
llfountainnd	John Day Willamette Deschutes John Day Willamette Columbia	.02	. 21	. 68	.31							.00	. 02	. 08	. 15	.03	. 75	. 30	.00	.00	.01			.11	. 90	.02		.01	.10	1.10	.32		2
Basin	John Day		T.	.03								.01				T.	T.	.20			. 20			T.			.30		.10	T.			0
ck Butta	Willemette		90	20	40						-	25		.35	. 40	.30	25	28	as.	96		. 30	481	00		- 1	90					40	- 12

Table 2.—Daily precipitation for December, 1912. District No. 12—Continued.

Stations.	Watershed.														I	ay o	f moi	nth.															
Stations.	Watershou.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
regon—Continued.																																	
lue Mt. Sawmill	Umatilla													****																			
rogan	Malheur															. 19	.17													.30			0.
uena Vista	Snake SE. drainage.	- * * *		T.									· Pr	95	T.	.01	700	rin.			. 01				. 04						. 03		0.
urns Mill	Snake	. 20												. 65	.70	.10	. 40													. 20			2
utte Falls	Rogue	. 01	. 02	.30	.08								.15	.15	. 10	. 29	. 98		. 43					.03	. 20	.08		. 05				. 45	
alifornia Gulch	Umatilla			. 21										. 24		. 06		. 21				. 14		. 08						. 28		. 27	
anyon City	John Day Columbia	.03		0.5	47							04		. 84	. 39	. 45	. 54	. 95		. 20	. 26			. 24	99		01	40	24	9 97			
ascadia	Willamette			.70	.36							.05	.07	43	. 10								****							3.37		1.12	
azaderohristmas Lake	do		. 05	. 50	. 15	.02						.02	.10	. 20	. 20	. 40	.60	. 11	. 50	.09	.05			. 48	. 53	. 10				1.98			
hristmas Lake	SE. drainage.	T.											T.	. 03	. 16	T.	. 02	. 08	.02						T. T.	. 05		T.		T.	. 16		0
olumbia Mine	Snake			T.	T.	10							. 02	. 03	.30	. 12	. 70												40		.17		
ondon	John Day				1.00	. 10								. 40	. 30	. 00	. 10								. 30	. 30		. 10	- 40	.90	.10	. 70	0
oquille River L'th.	Coast	.02	. 20	. 25										0.7	30	. 60	. 30	. 33	. 57					. 20	. 39		1	. 62		.86	.12	. 67	6
ornucopia	Snake	. 09	. 24	. 18	. 11	1.21								. 81	. 29	. 62	. 64	T.		. 05	18	7		. 10	. 19			. 08		1.01	. 39	1.08	
orvallis racker Creek	Willamette Snake		T.	- 40 Tr	1.90	T.					T.	. 05	.01	. 40	30	*	1.10	.08 T.		. 10	90	.02	. 03	. 20	. 20	*		*		. 60			
rescent	Deschutes		1.	.24	1.20								1.	. 20	2 . 27	21	.60	.01						01	10	26		T.		.50	- 40		
ayville	John Day			. 21	T.						1		T.	. 28	. 02	. 21	.12	.02						T.	.19 T.	T.		T.	T.	. 21	.36		
Deadwood	Coast		- 41	- 69	- 41							T.	i	. 74	. 50	. 60	1.49	. 28	.98	. 05	.03			. 59	1.04	T.	1	1.46	. 50	2.32	1.08	. 95	14
oraville	SE.drainage.			. 05	20								01	T.	2 00	0.0	OF		T.						. 04						. 01		0
rain	Columbia Umpqua	. 01	.02	41	. 41	.00			0000			. 05	.01	- 36	. 02	. 96	. 85	.10	. 70	.08	. 23	T		. 51	. 51	. 13		. 20	. 57	3. 21		1.19	
ufur	Columbia			. 38	3								T.	. 28	T.	.27	. 32	.00	. 05		T.			.06	. 03	. 400		. 00	. 15	1.22	. 26	. 45	3
uncan	Umatilla			. 70	. 20							. 60				. 20	.80		. 05			. 40						. 20	.80				1 0
cho	Columbia	T.		. 06									T.	.17		.14	.17											T.		. 13			
llambody	SE.drainage.					0000					0000																			.32			
ugene	Willamette	T.		T.	. 26	T.						. 05	. 07	. 09	24	.37	. 25	.34	T	****	****		****	. 20	.81	.00	3	. 10	118	.03	73	. 54	A
airview	Coast						1						1																				
alls City	Willamette		10													:																	
ir Glen	Coastdo	0	28	4	9 - 9/							-14	.07	- 47	. 07	1.09	1.45	. 40	. 69	****				***	. 56	. 57	. 50	.43	. 28	1.30	1.06	1.24	12
orest Grove	w mamette					1						- 14		, ch	. 21	. 08	1.10	.11	. 00		. 03	****		. 21	. 30	. 00			. 18	. 91	.09	. 02	1
ort Rock	SE.drainage.	1 00	2	16	3	1		1	1	1		1 19	T.	91	1 06	T.								T.	. 04		1	1	1	. 40	****	.18	1
alice	Rogue	. 00	2	. 31	.21							. 16	. 12	. 77	7 1. 22	.77	. 93	.12	. 35					. 08	. 25	. 52	2	06	. 02	. 79	. 50	1.02	
ardiner	Umpqua Umatilla	- 00	3 .00	26	2 0							. 23	.06	.8	5 . 43	.80	. 86	.13	. 60	. 02			****	. 22	. 38	. 50)		. 40	79	.17	. 42	
lencoe	Columbia	. 10	. 10	1.20	. 2		000					****		. 20	.00	33	.19		10				. 00	****	****					.07	19		3
lendale	Umpqua	T.	T.	.80	0							T.		. 40	0 .80	. 62	.38	. 09							.18	. 07	1 1	T.	. 06	.60	T.		4
lenora	Coast												1									1			1		1				1		
Fold Beach	Rogue	. 39	41	1 0	1 .2							94	- 16	. 90	. 80	.60	1 69	. 15	. 70	****				. 30	. 50			60	.10	. 50	. 30	. 50	1.3
Frand Ronde	do		. 33															. 92	1, 20	. 10	.01			. 14	. 90	. 30	0	5	. 31	1.91	. 50	1.12	14
Frants Pass	Rogue			. 00	8 .11							. 00	. 08	. 5	2 .31			. 08	.27	****				T.	. 47	.0	T.	.0	1	. 20	. 05	.36	3
raes Valley	John Day				20									. 10	0														T.	1.05	. 28	. 25	1
reenhorn	Snakedo		1 .07 T.	- 10	0 .50	.05						T.	.01	. 28	8 .2	. 47	. 72	. 01	.11	. 01	.09	. 05		. 01	. 16	. 13	2	00	3 .2	. 70	.41	. 50	4
urdane	Columbia				1 . 10													7.1	T		0.1				T	- 16	0	14	3	. 38		20	1 6
Happy Home	Umpqua	. 10	0 .24	. 6	2 .30	3						. 10	1.34	1.48	8 1.30	6 1. 62	1.78	. 15	.84					. 45	. 36	. 06	8	1.30	8 .46	12.54	1.30	1.86	115
Harbor	Columbia	. 6	01.50) .46	6 . 16							. 86	3 . 3!	5 63	5 1 0	90	.86	.80	1.05					. 82	. 55			. 1.00	5 . 84	25	. 95	.01	112
Hay Creek Hazeldell	Deschutes Willamette		65	2	3						T		36	. 11	2	2 .94	. 24	. 01	. 03									00	5 . 02	2	. 48	. 18	
leadworks	do		.27	4	8 .3)					1.		. 07	7 .78	6 .3	0 .60	70	. 42	. 75	10	40			65	30	3	2	41	0 .39	1.10	29	61	16
Heppner	Columbia	0		.1									. 03	5 . 13	2 .00	2 . 05	.02	. 10	.09		.01	. 02		. 07	T.	. 0.				2 2. 95	. 15	.03	1
Hermiston					5										0	3 . 13	+ 34														. 04		1.3
Hilgard	Gnd. Ronde.			. 10	0 .2									50	$\frac{0}{6}$. 10				·	.10					T.		10	0		20		T.	1
Hood River No. 2	do		03	3 . 3	9									4	2 .19			T.	.71	.03	01			. 29	36		4	2	9 .1	$\begin{bmatrix} 2.00 \\ 2.26 \end{bmatrix}$	44	1.00	5
Hood River No. 3	do			3	0							. T.	T.	. 31	1 .2	0 . 48	. 75	.07	. 40	.09				. 16	. 22	T.		2	0 .13	2 2.30	35	.74	1 6
lood River No. 4				5	0 .00	3							. 00	5 . 45	8 .13	2 . 46	. 94	. 46	. 65					. 30	. 20	.1	1	3	0 .10	3 2, 55	. 57	. 90) 1
loover	Willamette Gnd. Ronde.	Т.	.29	.8	0 .1							. 00	.00	.8	7 .2	. 69	1.25	. 26	1.04	.11	. 09			.10	. 47		2	5 . 5	8 1. 7	0 2.00	1.12	.15	1
Huntington	Snake		. 10		. 1									3	. 2	. 00	. 33		. 10	.04	. 14				. 30	.0		1	.00	. 81	. 13	. 45	
bex mine	Snake John Day Deschutes Snake Rogue Gnd. Ronde		. 08	3	7	. 09							. 01	1 .2	1 .1	7 .40	. 64		.12		.32	. 09		.12	.15	.1	5	0	5 .1	7 .40	.35	.40	1
mperial	Deschutes		. 14	.0	4 .0	. 05	.2	6								T.	.12	T.	. 02	. 01	T.				T.	T.		. T.			. 33		1
ronside	Rogne			1	7 0							m	T		7 .2	30	. 18	3.0	10			. 07			.15				. 1	0	. 15	. 05	1
oseph	RogueGnd. Ronde. KlamathdoGnd. Ronde. PittRogueJohn Day			. 4	0							1.	1.		2	0 .10	20	10	.10	.10			1		. 30				24	10	10	. 10	1
Clamath Agency	Klamath			. 10	0								. 50	0 .10	0 .3	0 .30	.80								. 40				4	20		. 30) 3
Klamath Falls	and Danie	***		. 13	2								. 0.	2 .2	6 .0	5 .40	. 51	. 02							. 05	.0	9			. 40	. 20	. 50) :
a Grandeakeview	Pitt		. 10	. 3	7	1				1			T.	.0	3 1	5 .00	. 07	00	.18	T.	. 24	. 01			.08	.1	4	. 0	5 .0	3 .31	.15	. 07	1
ilvglen	Rogue	1	1 .00	2	4 .2								115	8 .4	4 9	6 6	01	93	29	T					39	1	3 T		T	03	.00	.04	
ong Creek	John Day	0	2	. 1:	3 .0	1								3	4	17	. 19		. 04		. 04	.04			.02		1.	0	4 .0	9	. 12	.01	
ong Valley	Pitt																																
fcKenzie Bridge fcMinnville																4 .57	1.57	. 21	.77						. 38	. 5	9	4	3 .2	6 1. 13	. 81	1.10	
(arshfield		.00	3 .26	.4	1 .1	2				1	0	2 10	00	3 7	0 .4	5	1 00	. 05	69	01	. 08	00		. 35	. 00	. 0	5	3	4 . 5	11.92	. 40	1.00	2
faury	Deschutes	0	6	.1	1									. 7	0 T.	.44	. 36	.01	.00	.01	.04	. 00		T	.76 T.		1 0	E m	- m	. 52	AL CE	.86	N I
leadow Brook	Columbia		01	.5	7 .0	5								. 5	2	77	. 80	. 07	. 83	. 04	.06			. 26		.3	5	3	1 .2	0 2, 45	.76	.96	
Ranch.																								1		1	1	1	1	1		1	1
fedfordferrill	Rogue	. 0	T.	.0	.0.				. 02			. 0	.07	.19	0. 6	0 .0	. 28	. 22	. 32	. 04		****		T.	. 20			. T.		. 12	.10	. 27	1:
letolius	Int.drainage Deschutes			2	1									1	7		****					****		****							90		
likkalo	John Day																									***				. 04	. 40		1
diller Prairie	do																																1.
diramonte Farm 1 dountain Home	Willamette	. 0	04	. 4	1 .0							. 0	3 .0	5 .4	3 .3	0 .29	. 50	.10	. 33		. 05			. 24	. 37	.0	2	3	5 .4	1 1.65	. 18	. 72	
Mountain Ranch	Rogue	2	4 10	0 .0	6 .4							. 07		1.0	51.0	0 1 0	1.05	.10	.72	.17	. 32			.70	. 69	.0	7 .2	6 .4	8 .8	0 2.95	1.30	1.30	1
Mount Angel	Willamette			3	9 .0	6						. 11	1 .10	0 5	2 1	1 . 26	45	.10	37		00	****		48	45	1	3		0	5 1 00	. 50	67	1
Mount Hood			00	6 .6	7 .0	2						0	1	4	0 .1	5 .70	1.03	.20	.72		.00			30	.28	.0	2	1.0	2 .0	3 2. 70	6!	. 95	
Musick	Umpqua			3	0 .5	5						4	0 . 6	2 .9	7 .0	9 . 6	. 82	. 20	. 39	. 47							2	9 .7	1 .7	9 .91	1.0	. 39)
Newport	Decelurates	0	. 3	. 6	8 .1	4								7	0 .2	3 .80	.70	.07	. 44	. 03				.70	. 54	.1	6	6	5 .3	5 2. 24	. 50	.70	1
Ochoco Creek	Deschutes	.0	2	2	3		. 0	2						3	T.	.03	.03				. 01			·			. 0	2	2	7 T.	.07	. 70	1
dell	Calumahia	- 0								a a a L																							

See Alpine.

TABLE 2.—Daily precipitation for December, 1912. District No. 12—Continued.

Stations	Watershad														1)ay (of mo	nth.															
Stations.	Watershed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Oregon—Continued.																-																	
wyhee	Owyhee								,				. 25						T.			T.		-						25	. 05	T.	0.5
Paisley	SE. drainage			. 05	.01									.12	. 15	. 13	. 01	. 01							T.				****				
Parkdale	Columbia		. 03	. 95									. 05	. 03	. 15 T.	. 75	. 45	T.	. 13				. 44	.14	.32			. 05		2.70			
Pendleton	Umatilla			. 08								T.	T.	. 19	. 03	. 10	. 06	T.			T.			. 01	.06			T.		. 17	. 03		0.
Persist	Rogue	. 20	.30									Т.	. 15	. 70		. 30	1.75	. 45	. 38					. 05	. 62	. 33				1.00			6.4
Pilot Rock	Umatilla Columbia			. 18									. 05	. 10		T.	****		. 16		Т.				. 15			. 05		T.			1.1
Portland	Willamette		.02	20	02		****				***	.04	03	. 65	.30	. 40	. 60			.10	1.30		. 25	. 23	2. 10	. 10		. 20				2.10	
Port Orford	Coast	. 02	.02	. 40	.02							.04	.01	. 39		. 51	. 58	.11	. 33	T.	. 08			. 23	. 45	T.	. 02	. 64	. 42	2.23	. 33	. 82	8.6
Post	Deschutes	T.		. 22	****	****	****							.36	15	. 39	.14	T.	****	. 05	.01	****	****		T.	T.		.02	. 05	ii	40	00	9 6
Power House	Columbia	T.												. 05	. 10	. 00	. 22			.00								.02		.32	T . 40	. 51	1.
Prairie City	John Day			T.	.19								T.	. 05	.07	.08		. 00			. 22	. 05		T.	т.	.07		.02				.05	
Prineville	Deschutes																		. 00			.00						. 04	.03	.00	. 23	. 00	4.6
Prospect	Rogue Deschutes		.12	. 25	. 29							. 04	. 09	. 39	. 10	. 29	1.16	.80	. 35					.01	. 56			T.	T.	. 60	. 54	. 78	6.
Rager Creek	Deschutes	. 12		. 02	. 02								. 07	. 66		. 18	. 36	. 06			. 04				. 11				. 06	. 13	. 10	. 15	
Ramsey	Columbia		T.	. 41										.12		. 15 T.	. 55		.12					. 11	. 08	1			.12		. 42	. 56	3.
Range	John Day	T.		. 10	T.	. 10								. 50	. 30	T.	. 30	. 20			. 40			T.	T.	. 15		. 10	.10				2.
Ray Creek Redmond	Columbia Deschutes		T.	. 25									. 18	T.	T.	T.		T.		T.	T.							T.	T.	T.	. 26		0.6
Reston	Umpqua				.02								. 07	. 01		. 05	. 18													. 75	. 05		1.1
Richland	Snake	. 04	.04	. 01	. 40			****				. 13	. 04	. 50	. 52	. 82	1.22	. 34	. 51					. 39	. 69	. 54		. 46		1.06			10.4
Riverdale	Deschutes	in		12		****						10	10	40	TD.		T.				****	. 10		173	783	. 10		783	795				0.3
Riverside	Malheur	. 04		.08								. 10	.10	.20	1.	10	L.	. 04	I.	1.	1.	1.	.04	1.	1.					****	. 10		1.4
Rock Creek	Willamette		.08	1.39	. 69							15					1.60	90	1 00					1 57	92			1 65		2 60	1 28	1 56	0.4
Roseburg	Umpqua	T.	.08	. 22	.11				****			T.	0.4	90	.52	. 52	.30	02	28		T			.06	65	04		1.07	11	4.4	1. 20	1.56 .26	4. 1
Rosland	Deschutes	. 03		. 54	. 13									. 15		. 15	. 55		. 20			****			. 64	.01		. 69		. 24	80	05	4.5
Salem	Willamette	T.	T.	. 28	. 10						T.	.08	. 04	. 44	. 22	. 20	. 43	.02	. 26		. 01			. 16	. 54		.09	. 26	. 27	. 52		.32	
Seneca	SE.drainage	. 03		. 04	. 40									. 10	.11	.20	. 15	T.	T.		. 08		T.	.03	.06	1	1	1		. 04			1.2
Silver Lake	do				200		1	1	1	1			.17		. 15									.28			. 60					. 22	1.8
Siskiyou	Rogue			. 10	13	1		1	1		1		. 18			. 56	. 89			.02					. 24					. 38		. 62	
Sisters	Descrutes		1	. 17	. 41			ł		1			T.	. 20					. 23						. 05			. 35				1.52	
Sparta	Snake	T.	. 20	. 30	. 100	9	1		1	. 5			T.	. 02)		. 10			. 20	
Stafford	Willamette Gnd. Ronde.		. 03	. 32	.07							. 07	. 02	. 47	. 24				. 44	T.	. 05	. 03	. 02	. 30	. 53	. 01				1.71			
Summit	Willamette.	09	.30	50	20							. 05	. 12	. 11				. 04		***	. 26			. 07									
Summit Prairie	Deschutes		. 30	. 09	. 20							. 00		. 47	. 65	. 73	. 55	. 14	. 76	. 11					. 99		3	. 63	. 01	2. 20	. 03	1.11	11.7
Susanville	John Day				10	98							T	. 26	. 05	. 60		T.	.06		98			. 05	10			. 20	95	10	0.0	0.5	9
Tamarack	do	.02	0	. 10	T.	. 20								20	. 00			1.	. 00	T.	70			. 00	10			T.		T.	. 11	. 14	0.5
Telocaset	Snake		T.											. 20		. 10			. 05					. 20	. 10			. 10		.01		T.	0.8
The Dalles	Columbia																		. 00									. 20		.01			0.0
Tin Roof	Umatilla		- 18		. 20								. 01	. 16	. 15	. 26	.17		T.							. 15			. 10	. 34	. 07	. 47	2.8
Toledo	Coast	. 40	. 60		. 20									.80	. 40		. 70		. 60					. 85	1.05			1. 25	. 55	1.85	. 50	1.35	12.3
Trail	Rogue	.04	.07	. 27	. 10								. 16	. 44	. 10	. 13	. 95	.42						. 05	. 45	. 10)	T.		. 35	. 25	.38	
Trask	Coast	T.																						T.	T.					****		****	
Umatilla	Columbia				m.								T.			. 11												T.	****	. 16			0.4
Union	Gnd. Ronde.			. 09	T.									. 02	.00	.00			. 05		. 04				. 05	. 00			.04		. 03	T.	0.1
ValeValley Falls	Malheur SE. drainage												T.	****	12	****	****		****	****								***		***		***	
Vida	Willamette.	T	26	60	24	TO.						10	.10	.54		80	1.40	90	07	T.	.00		***	****	45	45		40	00	1 10	01	1 00	0. 7
Vistillas	Pitt		. 20	. 00	03	1.						. 14	09	40	.26	. 36					.00			. 01	. 90	.97	3	- 43	. 20	1. 10		1.06	
Waldo	Rogue				. 00	****	****	****			***	****	. 02	. 40	. 20	.00	. 02	. 21	.04	****											.00	. 00	2.
Wallace Orchard	Willamette			. 31	. 13	****	1						03	. 55	. 26	. 24	. 55	. 04	. 50	. 04	.65			.22		.80)	. 43			38	66	7.1
Walloupa	Gnd. Ronde.		. 06	. 32	. 10									. 11					. 18	05	0.9		1	0.4	. 23	. 04	1	- 06	. 05	.81	43	. 58	4.
Wallowa	do		. 04	. 20	. 05									. 04	. 17		. 10		. 16	. 05	. 05			. 02	. 07	. 04		. 04		. 24	. 02	. 16	
Wamic	Deschutes			. 15									T.						T.			2725	T.		T.								0.
Warmspring	do																																
Wasco	Columbia			. 22									. 0			.12								.12						. 85	. 15		1.
Welches	do	. 05	.30	1.30	. 40								. 03	. 70	. 25	.30	. 90	. 27	. 60							. 78	5		1.00	2.40	2.80	1.08	15.
Westfall	Malheur																																
Weston	Walla Walla			T.			. 20						T.			. 54		.02	T.		. 10		****	. 05				. 05	. 88	. 20	.12	T.	2.
Williams Yonna	Rogue Int. drainage			. 20									. 0		. 50				- 15						.35 T.					. 50			1.
	LIII. GDAIDAPE		Jana	. 138				1		112				1 . 13	.17	. 17	.40		5		1		1										

^{*} Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 12, Columbia Valley.

		Mon	tana.			Non											Idah	0.										
Date.	Kali	spell.	Miss	oula.		ton,	Во	ise.		ners	Hot S	pring.	Lewi	ston.	Mac	kny.	Nead Mead		Poca	tello.	Saln	non.	Shosl	hone.	Veri	non.	Wal	lace.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4 5	31 38 48 37 35	20 27 32 24 23	33 37 48 34 33	14 22 33 26 26	34 40 33 32 20		39 46	26 27 31 30 24			46 43 50 50 50	24 20 23 22 21	41 54 61 47 44	30 37 43 29 27	28 28 31 32 30	9 9 16 15 12			36 39 40 34 29	21 21 31 19 12	34 40 50 46 33	15 20 29 18 20	35 38 42 34	18 19 25	28 29 34 38 34	5 9 25 15 7	37 41 42 35 34	21 30 33 29 23
6 7 8 9 10	35 33 33 30 33	25 17 16 21 19	42 40 38 37 35	28 18 17 16 25	22 23 25 30 31		38 38 39 39 41	22 22 22 21 21			46 37 40 38 42	20 15 15 16 18	42 41 43 41 34	24 22 21 21 21 25	31 32 36 39 33	14 9 10 15 12			34 33 39 46 40	18 14 11 19 22	36 30 28 31 30	20 10 9 7 11	38 39 45 47 37	11 14 13 16 14	26 29 35 37 34	0 8 5 7 11	34 30 28 33 27	26 18 18 20 22
11 12 13 14	22 26 36 39 27	9 22 26 25 20	24 35 36 42 32	14 20 28 30 24	45 36 45 44 36	0 0 0 0 0 0	4.4	24 28 32 37 36			43 50 54 50 53	17 25 25 32 36	38 39 43 46 43	32 30- 32 35 33	34 35 35 35 30	12 16 14 26 19			37 43 51 43 43	15 21 32 33 27	28 34 37 40 35	5 17 17 27 20	43 52 52 45 45	13 28 31 33 32	31 42 40 40 35	8 18 24 24 24 17	28 36 40 34 34	14 21 32 29 25
16 17 18 19	36 40 39 34 25	20 19 24 18 15	41 41 38 34 25	24 30 25 23 14	30 38 40 45 26	15 3	40 43 46 36 29	32 33 30 24 19			46 46 53 40 31	30 32 31 20 16	49 49 50 43 37	32 40 39 28 25	28 32 30 30 21	11 20 4 14 4			36 34 42 29 25	27 24 26 17 12	38 38 36 30 25	22 21 15 12 7	36 36 38 31 24	26 21 16 13 1	30 26 35 38 18	32 5 8 - 7 -11	34 36 39 31 30	30 32 30 20 13
21 22 23 24 25	20 30 39 31 31	6 19 26 13 8	29 30 38 34 22	14 18 23 24 6	23 13 20 36 26	- 1 -15 - 3 13 4	28 30 29 34 27	10 13 14 18 17			36 33 32 38 36	20 9 19 21 15	32 41 43 47 44	23 24 35 33 29	15 16 16 16 16	2 3 2 0 0			19 23 32 36 27	2 6 2 22 22 10	20 25 24 33 28	10 5 10 15 0	24 26 27 33 24	8 9 10 13 8	20 16 21 24 20	- 6 -15 - 6 13 - 3	24 36 36 33 29	11 20 29 26 12
16 17 18 19 10	37 35 33 40 40 41	18 13 26 26 30 30	34 30 34 33 43 42	15 12 24 23 28 28	23 22 31 25 40 42	- 5 - 9 - 2 10 9 8	32 39 36 45 46 45	9 12 21 26 34 33			34 38 41 40 50 53	12 21 21 19 32 30	44 46 45 55 51 53	29 28 33 32 40 38	14 20 22 21 25 25	0 -4 -2 0 2 10			26 37 36 39 46 36	16 13 20 23 25 28	28 28 32 27 38 37	7 0 11 7 21 21	31 32 27 40 39	3 14 9 16 15	19 21 21 25 30 32	12 - 1 0 - 4 16 11	36 38 31 41 37 37	26 18 26 28 32 32
Mns	34.0	20.5	35.3	21.7	31.5		39.0	24.1			43.2	21.8	44.7	30.6	26.9	9.1			35.8	19.0	32.9	13.8	36. 4b	16. 1b	29.3	7.1	34.2	23. 9

5												1	Washir	gton.														
Date.	Aber	deen.	Bla	ine.	Col	ville.	Kos	mos.	Lak	eside.		orth	No Yak		Ode	essa.	Po	ort cent.	Sea	ttle.	Sixp	rong.	Spok	ane.	Tace	oma.		oosh and.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1 2 3 4	52	42 40 39 35 31	40 49 48 47 46	37 40 44 32 34	34 43 38 42 38	22 22 26 23 8	48 48 47 48 44	30 38 39 36 30	35 54 45 49 43	30 29 37 32 29	47 50 50 48 47	43 46 42 44 39	39 56 56 48 47	23 28 30 26 24	37 48 52 44 41	28 32 35 27 23	46 50 49 47 46	36 40 40 31 30	48 49 50 47 43	42 44 41 39 34	50 52 55 50 52	33 32 40 30 28	37 44 49 42 39	30 34 34 31 29	48 48 51 47 43	40 44 42 37 32	48 49 49 50 47	41 44 42 42 41
6 7 8 9 10	43 44 49 41 45	34 29 35 31 36	40 44 41 37 42	34 31 29 32 37	32 32 33 28 34	17 16 16 19 19	41 46 61 54 49	30 34 27 25 28	39 42 33 34 40	26 25 27 27 27	46 48 60 52 51	39 36 46 44 46	43 40 40 38 30	20 19 16 16 16	40 37 40 39 28	20 19 20 19 21	43 42 42 42 42	33 34 35 37 39	42 44 43 38 46	35 36 32 33 37	40 35 38 34 30	29 25 24 19 17	40 33 36 28 29	26 22 21 20 24	42 43 38 38 46	33 29 30 33 37	46 44 46 44 49	42 41 41 39 41
11 12 13 14 15	51 46 50 44 46	42 37 40 33 39	46 46 52 48 44	37 33 45 40 36	30 33 34 34 31	17 24 30 29 28	48 46 45 43 45	37 31 37 34 37	43 33 35 34 35	27 30 30 22 28	49 50 50 46 47	44 43 40 40 40	34 34 34 32 40	16 30 30 21 29	33 38 37 38 35	27 29 30 25 31	47 44 47 43 46	33 35 35 31 37	47 46 49 50 48	41 34 41 39 39	32 42 37 38 42	26 26 27 26 30	31 35 42 37 35	25 29 32 30 30	48 44 50 48 46	39 33 39 38 39	50 49 49 46 46	43 45 41 40 37
16 17 18 19 20	48 51 51 46 48	34 39 38 29 33	46 45 45 43 43	40 37 41 27 37	38 36 37 29 24	29 31 30 11 5	42 42 46 45 39	36 32 35 35 37	37 35 43 37 28	26 30 29 25 18	48 50 48 45 46	42 43 42 38 36	44 40 46 44 42	25 29 29 22 22	38 40 39 37 35	29 15 33 17 19	47 47 45 47 47	37 36 34 32 34	47 51 48 44 44	39 43 39 36 39	46 46 44 40 41	36 34 32 31 26	38 40 42 35 32	32 31 29 24 17	45 53 47 43 44	39 42 35 34 37	48 51 49 46 47	43 43 40 40 40
21 22 23 24 25	40 45 48 40 44	29 34 36 31 30	40 38 43 44 42	30 34 38 38 33	28 37 35 34 31	12 13 28 20 18	44 37 38 38 38	30 32 31 32 32	29 32 39 29 33	22 23 25 23 21	42 45 48 44 47	35 37 40 35 40	39 36 42 40 32	20 22 20 23 16	29 35 40 39 34	9 22 24 23 25	41 42 45 40 44	30 36 35 30 32	41 45 44 42 43	36 37 38 36 37	40 38 46 46 49	24 28 26 28 29	28 32 39 37 34	17 20 31 28 27	40 44 45 42 43	32 34 35 34 36	43 45 48 42 45	39 42 38 36 39
26 27 28 29 30	43 44 50 52 47 47	30 35 34 38 37 35	42 47 44 46 44 44	37 40 33 32 39 37	35 32 37 42 42 33	24 16 23 22 22 22 25	38 37 44 41 45 42	31 32 33 34 33 33	32 37 40 37 46 43	25 27 20 28 33 36	48 47 44 50 47 48	39 38 38 40 42 39	38 42 42 43 48 46	18 22 26 29 29 35	37 37 36 44 43 43	23 25 26 27 32 33	44 47 41 46 44 42	32 32 33 36 36 33	46 43 42 50 45 46	36 33 34 38 41 38	44 39 43 50 49 45	28 24 29 30 35 34	42 38 36 44 39 41	26 21 29 30 32 30	45 48 39 50 46 46	33 32 32 37 39 37	46 46 44 49 47 47	40 34 37 40 41 39
Mns	46.8	35.0	44.1	35.8	34.4	20.8	44.2	33.1	37.8	27.0	48.0	40.5	41.1	23.6	38.5	24.8	44.7	34.3	45.5	37.6	43.0	28.6	37.2	27.1	45.2	35.9	46.9	40.4

Table 3.—Maximum and minimum temperatures for December, 1912. District No. 12-Continued.

		alla										Ore	gon.									
Date.		illa, ash.	Ashl	and.	Bak	er.	Eug	ene.	Gold I	Beach.	Herm	iston.	Marsh	nfield.	Port	land.	Princ	eville.	Rose	burg.	Va	le.
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
3	46 53 62 47 45	35 44 38 33 33	47 47 44 42 37	31 32 32 34 25	35 35 48 36 35	17 21 28 25 16	58 €7 55 52	47 49 47 32 30	50 54 52 49 52	30 45 44 40 34	40 60 65 53 50	23 30 40 37 20	51 53 51 51 51	36 44 46 40 30	48 52 51 50 41	41 46 41 37 35			50 53 56 46 41	38 44 43 34 35	45 35 49 51 44	10 11 22 2 11
6	47 40 37 36 31	31 29 27 23 27	32 30 42 52 40	23 22 20 35 30	39 40 40 42 39	13 12 19 19 14	50 48 49 55 54	31 30 33 38 36	52 60 62 57 56	37 40 43 44 50	50 48 42 37 30	19 15 15 12 14	50 54 66 56 52	29 27 32 32 39	41 44 51 50 47	36 36 33 33 37			40 37 46 48 44	36 35 32 31 37	43 39 40 37 40	1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1
1	31 32 53 49 45	27 29 29 30 30	48 47 49 51 44	35 40 34 34 39	37 42 43 36 41	18 25 31 26 30	53 55 53 55 55 52	40 43 42 38 31	57 55 56 55 51	48 47 50 40 41	35 35 35 42 42	38 24 28 25 33	54 55 55 48 49	43 46 39 34 42	42 45 51 46 48	37 37 40 37 40			55 48	38 43 35 33 40	37 41 38 40 46	1 2 1 2 3
6	46 52 57 43 39	38 40 37 33 29	44 44 44 42 40	37 35 36 32 26	40 40 38 32 26	29 30 25 11 10	53 58 57 55 52	33 38 40 33 31	52 54 54 50 50	42 44 45 37 37	42 53 52 50 49	35 40 35 30 29	50 54 55 49 50	42 44 42 31 27	47 54 50 44 39	42 44 41 32 32			54	42 42 36 36 34	46 44 46 40	3 2 2 2 1
1	41 42 50 47 43	27 27 28 36 33	38 39 39 41 41	25 25 27 30 29	29 30 25 28 24	10 11 13 7 7	54 55 50 48 46	29 30 32 33 32	50 50 48 46 48	32 34 35 34 37	45 45 45 50 47	15 21 24 26 18	50 55 49 46 50	28 29 30 32 35	40 37 45 43 46	35 33 34 37 35			4.00	32 30 29 35 33		
6	48 50 43 57 47 51	32 33 35 40 38 33	51	28 22 25 31 34 35	28 27 34 42 38 39	12 11 26 26 26 25	44 48 46 50 50 48	27 32 33 34 40 33		32 37 32 44 42 44	47 42 46 48 62 54	18 15 32 32 35 24	52 46 46 53 54 52	28 29 35 42 40 42	39 42 41 54 48 46	30 30 35 43 42 38			. 44 . 60 . 52	30 27 34 43 39 33		
lean	45.5	32.4	43.6	30.4	35.7	18.4	50.5	35.4	51.2	40.0	46.5	25.9	51.8	36.0	45.9	37.1			47.1	35.8	42.7	20

^{•,} b, •, etc., indicate respectively 1, 2, 3, etc., days missing from the record. §§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WEATHER, FORECASTS, AND WARNINGS.

By EDWARD H. BOWIE, District Forecaster.

NORTHERN HEMISPHERE PRESSURE.

Alaska.—Pressure for the month was abnormally low for all stations, the greatest negative departure 0.49 inch being at Valdez which station also gave the lowest monthly mean, 29.321 inches. Pressure was below normal almost continuously, except at Sitka from the 5th to 10th and 19th to 22d; at Nome 17th to 25th, and at Dutch Harbor from the 20th to 24th. Lows occurred about the 2d-3d, 5th-6th, 8th, 12th-13th, 14th-15th, 22d-23d, 26th-27th and 30th; and highs about the 4th, 7th, 10th, 19th-20th, 24th-25th, and 28th. Severe gales accompanied by heavy snow prevailed from the 9th to 11th.

Honolulu.—Pressure averaged considerably above normal for the month, being below during the first decade, above during the second, and during the first half of the third about normal and the latter half above normal. Lows occurred on the 3d-4th, 19th and 24th; and highs

on the 14th, 16th-17th, and 29th.

Iceland.—Pressure averaged much below normal, being continuously so from the 8th to 21st and 24th to 29th, the lowest pressure reported being 28.22 inches on the 13th. Lows occurred on the 5th, 8th-9th, 11th, 13th, 18th, 20th-21st, 24th-25th, 28th-29th, and the last day of the month; and highs on the 2d-3d, 7th, 22d-23d and 30th. A severe disturbance visited the British Isles and France on the 26th and 27th, causing a number of wrecks.

Azores.—Pressure averaged above normal for the month, being continuously above from the 7th to 17th and from the 28th to 31st. Lows occurred on the 2d, 6th, 19th and 26th–27th; and highs on the 4th, 7th–8th,

12th, 15th, 28th-29th and 31st.

Siberia.—Pressure was above normal, being generally high over all sections during the first decade, and during the second decade it was high to the north and low to the south. During the third decade pressure was high during the first half and low during the second half. Lows occurred about the 4th, 10th-11th, 26th-27th and 31st; and highs about the 5th-6th, 8th, 17th, 21st, 24th-25th and 29th. The progression of highs and lows across the Siberian area was not well defined.

Miscellaneous.—Severe storms were experienced over the trans-Atlantic steamer routes about the 1st, 14th to

21st and 26th and 27th.

In the United States at the beginning of the month a low-pressure area of moderate intensity was over eastern South Dakota and high pressure areas were central over Montana and northern New York, the latter being of more than moderate intensity. Storm warnings were ordered on the 1st for the Upper Lakes and Lake Erie and on the 2d for Ontario and the Atlantic coast from Cape Henry northward. High winds occurred over the

districts indicated in the warnings. The low-pressure area advanced to Lower Michigan by the morning of the 2d, and during the 24 hours following had passed to Newfoundland. Precipitation was general in connection with this disturbance.

It was followed by a high-pressure area that advanced from Montana to the eastern Plains States by the morning of the 2d. On the morning of the 1st cold wave warnings were ordered for the Plains States and decided falls in temperature occurred by the morning of the 2d over that region. By the morning of the 3d the high pressure area was over the Atlantic seaboard. On the morning of the 5th, following the passage of this high pressure to the Atlantic Ocean, a number of stations along the coast from Norfolk to Jacksonville reported the occurrence of dense fogs.

From the 2d to the 5th, a low advanced over a northern course from British Columbia to the Grand Banks, precipitation attending this storm being inconsequent.

It was followed by another low that appeared over British Columbia on the 3d and advanced to western North Dakota by the following morning, causing heavy snows over Colorado, Wyoming, Nebraska, and the Dakotas and consequent delays to railway traffic. By the morning of the 5th it was central over northeastern Missouri, when storm warnings were ordered for the Great Lakes, and with the northeastward advance of the storm to eastern Ontario during the following day, gales occurred over the Great Lakes, causing the loss of several vessels. By the morning of the 7th, it was over the Grand Banks with increased intensity, as indicated by a pressure reading of 29.22 inches near its center. While the storm was over Ontario on the 5th, storm warnings were ordered for the Atlantic coast from Delaware Breakwater to Eastport and brisk to high winds were reported during the latter part of that day. Precipitation was general from the Mississippi Valley eastward.

No high-pressure area of consequence followed this low, although pressure rose to considerably above normal from the Pacific coast to the southern Slope districts. Cold-wave warnings were ordered on the 4th for eastern Montana, the Dakotas, and western Minnesota and decided falls in temperature followed over those States.

The next low of consequence moved from Alberta on the morning of the 6th to eastern North Dakota in the 24 hours following and storm warnings were ordered for the Great Lakes. During the next 24 hours, attending the advance of the disturbance to eastern Quebec, gales occurred as indicated in the warnings, and during the night of the 8th storm winds were experienced from Sandy Hook to Eastport, warning of which had been previously issued. On the morning of the 9th the storm was east of Nova Scotia. Precipitation attending this disturbance was slight.

Following the passage of this low cold wave warnings were ordered during the 7th from New England to the

Plains States and as far south as Kentucky, and sweeping changes to colder weather overspread the country indicated during the next 48 hours. A high-pressure area advanced from Alberta on the evening of the 7th to Kansas by the following evening, and thence passed across the Gulf States during the 9th and 10th, causing heavy frosts near the Alabama and northwestern Florida coasts and in extreme southern Georgia, warnings of

which had been previously issued.

The next low advanced from Saskatchewan to Lake Superior by the morning of the 10th. Storm warnings were ordered on the 9th for the Great Lakes and dangerous gales followed over the region indicated, being particularly severe on Lake Erie. On the 10th storm warnings were also ordered for the Atlantic coast from Sandy Hook northward and brisk to high winds occurred along the coast, attending the passage of the storm to eastern Quebec by the morning of the 11th, where it persisted for several days. Precipitation was fairly general over the northern States east of the Mississippi River, particularly in northern New York, where heavy snows were reported. During the 9th and 10th showers were well distributed in the Gulf States in connection with a disturbance that decreased in intensity and lost its identity over the Gulf of Mexico.

A high-pressure area appeared over Saskatchewan on the 10th and the cold-wave warnings issued for the Plains States were later justified. By the morning of the 12th it was over Missouri and during the next 48 hours moved to Georgia and thence passed off the coast

with decreased intensity.

A disturbance that appeared over Saskatchewan on the 14th passed along a northern route to Newfoundland by the 17th, where it showed with increased intensity. Precipitation was light and confined generally to the Lake region and New England.

A high-pressure area of slight intensity advanced from the Rocky Mountain region on the 15th to the Atlantic coast during the next 48 hours and, following its passage to the ocean on the 18th, heavy fog was reported from portions of the South Atlantic States.

A low-pressure area that first made its appearance on the Oregon coast on the evening of the 15th was central over British Columbia on the morning of the 16th, having in the meantime sent an offshoot to western Kansas. This offshoot became the principal storm and by the morning of the 17th had advanced with increasing intensity to southern Minnesota, causing unusually heavy snows in portions of Wisconsin. By the morning of the 18th there were two centers, one over lower Michigan and the other over Tennessee, and on the evening of this day storm warnings were ordered for the Atlantic coast from Delaware Breakwater northward. On the 19th the northern storm center was over extreme northern New York, while the southern center had advanced to a position near Nantucket. On the evening of that date there remained but one center near Father Point, with a pressure reading of 28.78 inches. Gales were reported from New York northward, and the storm persisted over the Canadian Maritime Provinces until the 22d. Precipitation was general from the Plains States eastward in northern districts and scattered

On the 17th the Pacific high-pressure area had overspread the middle Pacific coast, and on the following morning an offshoot from it was over southwestern Colorado. By the morning of the 19th it had passed

to the middle Gulf States, causing frosts at a number of stations along the coast, warnings of which had been previously issued. By the morning of the 20th it was over northern Florida, having caused heavy to killing frosts in the extreme northern part of that State and light frost over the central portion. On the 17th storm warnings were issued for the north Pacific coast and destructive gales occurred over that region in connection with a low-pressure area that advanced from Alberta on the 18th to North Dakota on the 19th. It passed thence to lower Michigan and thereafter lost its identity. Precipitation in the form of snow occurred from the northern Plains States to the Lake region.

Pressure remained high on the Pacific coast from the 17th to 19th, on which latter date it became high over the middle Rocky Mountain region and on the following morning a high-pressure area was central over the middle Mississippi Valley. During the two days follow-

ing it advanced to the middle Atlantic coast.

Precipitation began over the west Gulf States on the 21st following a slight pressure fall over that region, and snow was reported from Oklahoma, New Mexico, and the Texas Panhandle. By the following morning there were indications of a low development off the Texas coast, the precipitation area in the meantime having spread to the South Atlantic States. A well-marked center was over Louisiana on the 23d, and by the evening of that date it was over Alabama. Storm warnings were ordered for the Atlantic coast from Wilmington northward to Boston, and on the morning following when the storm was off the Virginia coast the orders were extended to Eastport. The storm advanced rapidly northeastward to the Canadian Maritime Provinces and, although only a few coast stations reported verifying velocities, vessel reports indicate that the storm was severe off the coast. Several wrecks due to collision were reported along the north Atlantic coast, being probably due to the heavy snow, together with the high winds. Precipitation was general from the Gulf States to New England, being heavy in parts of the Gulf States. Falls of snow of 10 inches or more occurred in the Appalachian region and thence northeastward along the coast to southern New England.

A high-pressure area advanced from the middle Plateau region on the 23d to the west Gulf States by the 24th, causing frosts in the vicinity of Corpus Christi, and freezing temperatures over Louisiana and Texas, warnings of which were issued on the previous day. The high passed to the Middle Atlantic States during the next 24 hours, where it persisted for another day before passing northeastward over the ocean. On the 25th frosts occurred in extreme northern Florida and southern Alabama, for which warnings were issued on the 24th.

Another disturbance passed from Saskatchewan on the 22d to Lake Huron on the 24th. It was central over extreme northern New York on the following morning, but was not thereafter traceable on the weather charts, although it probably aided the development of the storm that advanced from the Virginia coast to the Canadian Maritime Provinces during the 24th and 25th. Precipitation in connection with this disturbance was unimportant.

The next disturbance passed from Saskatchewan on the 24th to Ontario on the 25th, with a second center in its trough over eastern Colorado. By the 26th the northern center was over eastern Ontario, while the southern center was apparently over southern Texas. On the

evening of that date there were some slight indications of a development off the south Atlantic coast and by the morning of the 27th there was a low center off the New Jersey coast, with pressure readings at Atlantic City and New York of 29.52 inches, while to the northward near Lake Ontario was the remainder of the northern storm that on the previous morning was over eastern Ontario. Storm warnings were issued on the afternoon of the 26th for the Atlantic coast from Savannah to Hatteras and on the morning of the 27th extended northward to Eastport. High winds occurred over the south Atlantic coast on the 27th and on the middle Atlantic and New England coasts on the 28th. By the morning of the 28th the Atlantic coast storm was central over the Canadian Maritime Provinces, with the lowest reported barometer reading 28.22 inches at Sydney, Nova Scotia. Precipitation was general from the Mississippi Valley eastward, being in the form of snow over northern and rain over southern districts.

A high area appeared on the middle Pacific coast on the 25th and on the following morning it was over the middle Plateau region. During the 48 hours following it overspread the Gulf States, causing heavy frosts at a number of points along the immediate Gulf coast, warnings of which had been previously disseminated. By the morning of the 29th it was over eastern North Carolina.

Following the passage of this high to the Gulf States on the 28th, a low pressure area developed over the Rocky Mountain region and by the following morning was central over northeastern Kansas. On the 30th its center was northeast of Lake Superior and storm warnings were ordered for the Middle Atlantic and New England coasts and high winds followed over the region from Hatteras northward. On the 31st it was over the Canadian Maritime Provinces with increased intensity. Rain from this storm was general east of the Mississippi River.

A low-pressure area passed inland over the extreme north Pacific coast during the 29th and on the last day of the month it was over Ontario, no precipitation of importance having occurred within the area of its influence.

On the last day of the month another low passed inland over the north Pacific coast and was central over Saskatchewan.

Pressure on the California coast remained almost continuously high during the last half of the month.

RIVERS AND FLOODS, DECEMBER, 1912.

Prof. ALFRED J. HENRY, in Charge River and Flood Division.

As in the preceding months of September, October, and November, fluctuations in river heights throughout the United States were small and unimportant, except in the rivers of southeastern Mississippi, viz, the Pearl and Pascagoula. Heavy local rains in the State of Mississippi caused the Pearl River to exceed the flood stage in the

lower part of its course from the 9th to the 15th and again on the 28th. The Pascagoula was near a flood stage on the 10th and at flood stage on the 28th. The loss of property was small, probably not more than \$1,000, in live stock in the lowlands of the Pascagoula.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations elected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

Average temperatures and departures from the normal.

Districts.	Num- ber of sta- tions.	Average tempera- tures for the cur- rent month.	Departures for the current month.	Accumulated departures since Jan. 1.	Average depart- ures since Jan. 1.
New England Middle Atlantic South Atlantic Florida Peninsula ¹ East Gulf West Gulf. Ohio Valley and Tennessee. Lower Lakes Upper Lakes North Dakota ¹ Upper Mississippi Valley Missouri Valley Northern slope Middle slope.	9 11 11 14 11 13 9	34. 6 39. 2 50. 4 65. 3 50. 3 47. 4 37. 5 32. 9 28. 0 17. 8 31. 8 32. 2 27. 0 34. 5	+5.5 +4.2 +3.2 +4.5 +1.2 -1.7 +0.8 +3.5 +4.1 +4.5 +5.3 +3.3 +1.6	- 0.4 - 1.9 + 2.3 + 3.6 - 6.9 -11.3 -15.0 -18.0 - 5.3 -13.9 - 3.2 - 12.3 - 15.2	0.0 -0.2 +0.2 +0.3 -0.6 -0.9 -1.2 -1.5 -1.5 -0.4 -1.2 -0.3 -1.0
Southern Slope 1. Southern Plateau 1 Middle Plateau 1 Northern Plateau 1 North Pacific Middle Pacific South Pacific	8 10 10 9	38.3 37.3 24.6 30.3 41.8 47.8 51.8	-2.7 -4.3 -2.6 +0.9 -0.2 -0.6 -1.1	-13.2 -12.3 -17.2 -17.5 - 9.5 + 7.4 - 3.5 + 4.3	-1. 0 -1. 4 -1. 5 -0. 8 +0. 6 -0. 3 +0. 4

¹ Regular Weather Bureau and selected cooperative stations.

Average precipitation and departure from the normal.

,	N	Average.		Departure.		
Districts.	Num- ber of sta- tions.	Current month.	Percentage of normal.	Current month.	Accumu- lated since Jan. 1.	
New England	11	4.56	125	+0.90	- 2.70	
Middle Atlantic	15	3.47	109	+0.30	- 0.60	
South Atlantic	11	2,88	78	-0.80	- 4.20	
Florida Peninsula 1	9	2.29	85	-0.40	+10.50	
East Gulf		6. 61	147	+2.10	+16.00	
West Gulf		3.10	91	-0.30	- 5.80	
Ohio Valley and Tennessee	14	3.29	97	-0.10	+ 0.70	
Lower Lakes	10	1.90	66	-1.00	- 0.20	
Upper Lakes	13	1.67 0.60	77	-0.50 0.00	- 1.60 + 1.60	
Upper Mississippi Valley		1.01	100 56	-0.80	- 3.00	
Missouri Valley	12	0.33	32	-0.70	- 4.10	
Northern slope		0. 46	53	-0.40	- 0.10	
Middle slope	6	0.34	46	-0.40	- 0.20	
Southern slope 1,		0.89	90	-0.10	+ 0.40	
Southern Plateau 1		0.28	36	-0.50	- 0.60	
Middle Plateau 1	11	0, 25	24	-0.80	- 0.30	
Northern Plateau 1	9	1.21	71	-0.50	+ 2.30	
North Pacific	7	7.05	89	-0.90	- 2.10	
Middle Pacific	7	1.82	42	-2.50	- 6.30	
South Pacific	4	0.16	7	-2.00	- 3.40	

¹ Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departure from the normal.

Maximum wind velocity.

Districts.	Average.	De- parture from normal.	Districts.	Average.	De- parture from normal.
New England	74	-2	Missouri Valley	65	-10
Middle Atlantic	74	-1	Northern slope	68	(
South Atlantic	77	-1	Middle slope	61	+ 5
Florida Peninsula	84	+2	Southern slope	68	+ :
East Gulf	78	+1	Southern Plateau	57	+1
West Gulf	73	-1	Middle Plateau	66	
Ohio Valley and Tennessee	72		Northern Plateau North Pacific	76 89	+
Lower Lakes	76	-4 -2	Middle Pacific	75	
Upper Lakes	79	-3	South Pacific	58	-1
North Dakota	82	+3	Double Lacine	99	-1
Upper Mississippi	02	70			
Valley	73	-5			

Average cloudiness and departure from the normal		Average	cloudiness	and	departure	from	the	normal.
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Districts.	Average.	De- parture from normal.	Districts.	Average.	De- parture from normal.
New England Middle Atlantic South Atlantic Florida Peninsula East Gulf West Gulf West Gulf Unio Valley and Tennessee Lower Lakes Upper Lakes North Dakota Upper Mississippi	4.8	+0.3 0.0 +1.2 +0.4 +1.3 +1.0 -0.5 -0.5 0.0 +0.3	Missouri Valley Northern slope. Middle slope Southern slope. Southern Plateau Middle Plateau Northern Plateau North Pacific Middle Pacific South Pacific	3.0	-1. +0.4 -1. -0.5 -0.4 -1. -0. +0. -1.

Stations.	Date.	Ve- loci- ty.	Direc- tion.	Stations.	Date.	Ve- leci- ty.	Direction.
Block Island, R. I	8	55	w.	New York, N. Y	9	60	nw.
Do	9	53	nw.	Do	12	60	nw.
Do	19	56	W.	Do	19	50	nw.
Do	27	53	nw.	Do	27	62	nw.
Do	28	64	nw.	Do	28	72	nw.
Do	30	53	S.	Do	30	57	SW.
Buffalo, N. Y	2	72	SW.	Norfolk, Va	30	58	W.
Do	6	70	W.	North Head, Wash	2	50	S.
Do		66	sw.	Do	3	56	nw.
Do	9	70	SW.	Do	4	64	nw.
Do		68	SW.	Do	13	68	Se.
Do	13	52	SW.	Do	15	56	80.
Do	19	52	W.	Do	17	60	38.
Do	22	56	sw.	Do	27	60	se.
Do	30	50	SW.	Do	28	62	Se.
Burlington, Vt	. 10	50	8.	Do	29	73	S.
Canton, N. Y	6	62	SW.	Do	30	90	S.
Do	10	54	SW.	Do	31	64	8.
heyenne, Wyo	30	60	nw.	Point Reyes Light,	-		
Detroit, Mich	2	54	W.	Cal	3	75	nw.
Duluth, Minn	1	50	nw.	Do	14	60	nw.
Do	5	54	nw.	Do	15	59	nw.
Hatteras, N. C	27	52	nw.	Do	24	51	nw.
Helena, Mont	31	50	SW.	Do	28	50	nw.
Mount Tamalpais,				Reno, Nev	24	50	W.
Cal	3	66	nw.	Do	31	51	W.
Do	4	65	nw.	Seattle, Wash	17	64	SW.
Do	5	51	ne.	Sheridan, Wyo	30	56	W.
Do	14	54	SW.	Southeast Farallon,	-		
Do	16	51	nw.	Cal	3	56	nw.
Do	21	56	ne.	Do	4	50	nw.
Do	24	52	n.	Syracuse, N. Y	2	50	8.
Do	26	62	nw.	Tatoosh Island,	3	20	-
Do	31	54	nw.	Wash	14	50 62	SW.
Mount Weather, Va.	12	58	nw.	Do	15	50	ne.
Do	16	50 52	nw.	Do	17	88	S.
Do	19	68	nw.	Do	18	57	w.
Do	27	67	nw.	Do		60	SW.
Do	28	74	nw.	Do	28	60	W.
Do	30	69				79	S.
Do		.58	W.	Do		75	
Nantucket, Mass	24. 30		ne.	Toledo, Ohio		59	w. sw.
Do	2	55	SW.		6	52	SW.
New York, N. Y	8	58 59	SW.	Do	10	53	SW.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a

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pag. f^S. Uruguay. Instituto meteorológico nacional.

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RECENT PAPERS BEARING ON METEOROLOGY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by

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Craig, J. J. Meteorological factors of mortality in Cairo and Alexandria. p. 246-250.

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Baird, S. P. Increased flow of springs just before rains. p. 33

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— The winds of Lake Tanganyika. p. 67-68.

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Shaw, W. N. Léon Philippe Teisserenc de Bort. p. 519-520.

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Loisel, J. Les phénomènes optiques de l'atmosphère. p. 87-90.

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Peppler, A. Studien über Zyklonen und Antizyklonen. p. 1-62.
Höllerer, J. Eine neue Methode zur raschen Auswertung von
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strahlung auf hochalpinen Stationen. p. 561–569.

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Köppen, W[ladimir]. Ein Wort über die Beschlüsse der Internationalen Kommission für wissenschaftliche Luftschiffahrt. p. 578-580.

Dorno, C. Über den Einfluss der gegenwärtigen atmosphärisch optischen Störung auf die Strahlungsintensitäten der Sonne und des Himmels, sowie auf die luftelektrischen Elemente. p. 580-

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Quervain, A. de. Merkwürdiger Himmelsanblick im Inneren Grönlands im Sommer 1912. p. 587.

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Hann, J[ulius] v. Die niedrigste Jahrestemperatur der Erde. p. 590-592.

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Kesslitz, W. v. Uber die Messung der Lufttemperatur zur See. p. 599-602.

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MONTHLY AND ANNUAL PRECIPITATION AT MAZAT-LAN, SINALOA, MEXICO, FOR THE YEARS 1909, 1910, 1911, AND 1912.

[Data furnished by W. E. Alger, United States consul.]

	1909	1910	1911	1912	Average.
January	T.	T.	T.	0.18	0.04
February	0.00	0,00	1.77	0.33	0.52
March	0.00	0.00	0.00	T.	T.
April	0.00	T.	T.	0.00	T.
May	0.00	0.00	T.	T.	T.
June	0.07	0.40	0.52	4.26	1.31
July	5.52	8, 57	8.76	1.11	5, 99
August	9.28	4, 61	6, 10	3, 19	5, 80
September	1.92	5, 03	2.18	7,04	4.04
October	T.	4.04	3.91	0.62	2.14
November	0.00	0.00	1.37	0,00	0.34
December	2.89	1.69	0.56	0.26	1.35
Annual	19.68	24.34	25. 17	16.98	21.53

NOTE.—On account of the meager character of the data regarding rainfall distribution over the Pacific coast districts of Mexico, the above table should be of interest. Attention is at once drawn to the heavy rainfall of the summer months, and the marked dryness of the winter and spring periods, conditions directly opposing those prevailing along the Pacific coast of the United States.

P. C. D.

TWO CLIMATIC CROSS-SECTIONS OF THE UNITED STATES.1

By Robert De C. Ward, Harvard University, Cambridge, Mass.

Introduction.—Between the tabulated data on a page of some climatological report, and actually experiencing the climate itself and observing its effects, there is a difference as great as that between reading a description of a glacier and seeing or climbing over the glacier. traveler who is something more than a sightseer, and who is interested in climatological "field work," can see, even through a car window, types of meteorological conditions and their effects which will give him a vivid impression of the larger facts of climate and of their control over man. Such field work is not instrumental. It may be termed a series of "climatic snapshots." The impressions thus gained are inevitably superficial. But, taken together, they constitute a sort of moving picture as much more vivid than the tabulated data of climate as the real glacier is more vivid than the printed account. The writer had the privilege of taking part in the recent Transcontinental Excursion of the American Geographical Society. This trip gave an excellent opportunity to see two climatic cross-sections of the United States. As the journey was made rapidly, the climatic contrasts were sharply emphasized, and the "snapshots" were very clear and instructive. Some of the impressions thus gained are briefly described here in the hope that readers who may not have had the good fortune to take such a trip may perhaps, in some slight way, share in the meteorological advantages of the journey.2

¹ Notes taken during the Transcontinental Excursion of the American Geographical Society of New York, Aug. 22-Oct. 18, 1912.
² The party left New York Aug. 22, by special train, and traveled via Albany, Chicago, Madison, Duluth, Yellowstone National Park, Spokane, Seattle, San Francisco, Salt Lake City, Denver, Santa Fe, and the Grand Canyon to Phoenix, Ariz. From Phoenix the return journey was via Kansas City, Memphis, Birmingham, Chattanooga, Asheville, and Washington to New York.

New York to Duluth.—The favorable distribution and amount of rainfall, and the general uniformity of weather types, of climate, and of agriculture over the northeastern section of the United States, bring fewer quick, sharp contrasts to the attention of the average traveler, who is accustomed to a humid climate, than he notes farther west and southwest, where decreasing rainfall, irrigation, dry farming, treelessness, and deserts are striking features of the landscape. There was, nevertheless, much of interest in the first 10 days of the transcontinental journey. A series of six low-pressure areas, moving rapidly across the northern portion of the United States, and of three anticyclones, controlled the weather. The journey was westward; therefore the succession of varying weather conditions was rapid. The "lows" brought their usual accompaniments of high temperatures in the southerly winds of their eastern quadrants, followed by showers or heavy rains and then clearing, cooler weather on the rear. Yet the regular sequence of these types was such that no real inconvenience or change of plan resulted from the rains, while the cool and clear anticyclonic days, with northeasterly and easterly winds, happened to be just the days which were spent sightseeing in the cities (Chicago, St. Paul, and Minneapolis). The muggy heat of the first cyclone was oppressive during the ascent of Mount Beacon, on the Hudson (Aug. 22), and the haze of the southerly winds interfered with the The ice houses along the Hudson brought a suggestion of winter cold into the hot hours of this first day, as did the guidebook's statement that "Poughkeepsie is the center of ice-boat sailing." The long trains of meatladen refrigerator cars, bound for New York City, emphasized some of the economic consequences of our summer heat. The rains which followed interfered somewhat with the comfort of a morning motor excursion from Syracuse, but the brisk southerly winds of the next depression were very favorable for the view of Niagara Falls from the Canadian side, for they blew the spray away from that side, and the heavy warm southerly rains which followed fell while the party was on the By the time of a morning excursion, on the next day, there was only the evidence of what had happened in the swollen, muddy streams, the standing water in the fields, the bent and broken cornstalks, and the damaged fruit trees.

During the steamer trip from Toledo to Detroit the change from the warm, muggy southerly winds in front of the third cyclone to the cool, dry, gusty northwesterly winds in its rear was so sudden as to attract the attention of every member of the party. The showers from the fourth cyclone again fell during a night journey (Chicago to Madison). Economic climatology was illustrated at the Syracuse salt works, where natural evaporation is carried on under unfavorable conditions, owing to the large amount of cloudiness and the high relative humidity, although rain is kept off the evaporating basins by roofs. The contrast between these unfavorable conditions of evaporation in the damp, cloudy, and rainy East and those seen later near Salt Lake City, in the dry and clear West, was very striking.

Duluth, "the city of perfect summers," as it is called in some of the local advertising matter, greeted the party with heavy easterly rains on the morning of their arrival (Aug. 30), and again on the afternoon of the second day at that place (Aug. 31). The temporary clearing between these two rainy spells gave opportunity for a trip on flat cars through the open-pit iron mines at Hibbing, and for a steamboat trip in Duluth Harbor on a chilly, overcast

morning, with northeast winds preceding the second rainy spell. This precipitation all came in connection with a considerable area of low pressure and generally stormy weather, covering the region west of the Lakes and extending up into western Canada. These rains, which had been quite general throughout the northwest for a week or more, had interfered with harvesting, and there were fears of a "tie-up" of grain-carrying vessels at Duluth in consequence. Duluth's shipping trade is, naturally, very closely dependent upon season and weather. The close of lake navigation, in November or early December, turns the transportation of freight to the railroads, or leads to a delay in shipments until the opening of navigation in spring (about Apr. 15). The iron-mining industry is also closely dependent upon weather conditions. ore freezes readily at temperatures 10° or so below 32° F., and precautions must be taken not to have the ore on the cars long at very low temperatures.

It is thus obvious why the local iron interests, as well as those which handle grain and other agricultural produce, watch with care the local forecasts of minimum temperatures. The iron mines are operated through the winter, but more blasting is then necessary. The ore is quite commonly put into so-called stock piles, where it is kept for spring shipment by water. During the winter, while the ore boats are out of commission, their crews scatter to other occupations, or attend schools or colleges. The cold winters have their compensations. Duluth is far enough toward the northwest to have many clear, cold, calm days of the typical western Canada type, and to escape much of the stormy weather of the eastern sections. Ice-boating and ski-running are common winter sports. This northern latitude also puts the city on the northern side of the track of most passing cyclones. 'Northeast storms" and "backing" winds are the rule. Hence the sequence of weather changes, the kind of precipitation, and the wind changes, are characteristically different from those at stations farther south.

Duluth to Yellowstone National Park.—Through the sparsely settled forests of northern Minnesota, and then under conditions of increasing aridity, decreasing rainfall, more evaporation-among scattering trees, the train passed quickly westward to the eastern border of the treeless Great Plains. If one may trust an impression gained from the window of a rapidly moving train, it would seem as if this western Minnesota country must, owing to its favorable rainfall, have a splendid future for farming. About at the eastern boundary of North Dakota is found the mean annual isohyetal line of 20 inches, that critical limit which has been of such far-reaching importance in the settlement and development of the Great Plains. "East of it, success; west of it, failure," is a statement often made regarding the relation of this line to agriculture. Yet no fact is to-day of greater significance in the history of these great Northern States than the extraordinary success which has been attained in agriculture well to the west of this same line, by means of the scientific methods of soil preparation and of cultivation known collectively as dry farming. It would be convenient, and economically highly useful, if the limit of agriculture could be definitely stated in exact terms of inches of mean annual rainfall. This is impossible. There are too many other factors concerned in the relation. The famous Red River Valley with its fertile soil, and its immense "bonanza" wheat farms, was crossed on a beautiful Sunday morning in early September (Sept. 1). Here the mean annual rainfall is a little over 20 inches, and the mean seasonal rainfall is less than 15 inches.

The rains of the past few days had turned the rich black soil into such thick mud that motor trips, except on the paved streets of Fargo, were impossible. The presence of many "farm hands" in Fargo emphasized the part which the unfavorable weather had played in delaying harvesting. In the great seasonal migration, from Texas to Canada, following the ripened crops, a part of the army of harvest hands had here halted temporarily in the great

North Dakota wheat country.

Farther west the decreasing rainfall was clearly evidenced by the increase in the number of cattle as the farming area became more and more restricted. Windbreaks, carefully planted and tended, showed the need of protection against the high winds which sweep over these great northern plains, and emphasized their natural treelessness, except along the river valleys. The necessity of a proper selection of the trees which will grow under the unfavorable climatic environment of this region was emphasized by the sign on a nursery in the valley of the Cheyenne River: "Northwestern Nursery Co. The best trees for the prairies." Snow fences, often double, along the railroad indicated the climatic handicap of drifting snow in the winter blizzards. In many places the Northern Pacific Railroad is replacing the snow fences with trees, and while this is succeeding fairly well in eastern sections, it becomes more and more difficult in the West. Windmills gave clear proof of the necessity of pumping water. Thus the westward journey across the Great Plains gave a vivid picture of the importance of the rainfall and wind control. At Bismarck, N. Dak., some irrigation was noticed, but not yet on a large scale. Dry farming has been so successful throughout an extended area in the Far West, in recent years of heavy precipitation, that the need of irrigation in the long run has not yet been realized by hundreds of farmers who have prospered without it. At Medora, in the "Bad Lands" of western North Dakota, the aridity was indicated by the presence of the sagebrush and of scattering cactus; while the strong winds, carrying clouds of dust, and the marked diurnal variation of temperature under a clear, anticyclonic sky, with a wonderfully clear, cool, calm night added to the typical summer weather characteristics of our western "semiarid" country. Trees growing on the northern, rather than on the southern slopes, probably indicate the unfavorable effect of the intense heat on the latter, and possibly also of the greater amount of soil movement. A dry climate, scanty vegetation, and the quick removal of the sands and clays by the rivulets and streams produced by the occasional rains, combine to produce this curious Bad Land topography. Beautifully green and fertile are the river valleys through which the Northern Pacific Railroad crosses Montana, with their crops of cereals, alfalfa, vegetables and fruit, and with their farmhouses nestling down among the trees. But back of these oases there are the sagebrush and the bunch grass and the aridity of the semidesert, with their scattered cattle and sheep, while many dry farmers are trying their luck on the debatable ground between the valleys and the desert.

Yellowstone National Park.—Six days, full of interest, were spent in the Yellowstone National Park (Sept. 3-8). Here, as much as anywhere else on the excursion, 'weather" was obvious and compelled attention, not because it was unseasonable or unusual, but because it was different-normally and naturally different-by reason of altitude, and latitude, and longitude, from the weather types of the East and of the Plains. A splendid variety of weather did that week in the Park bring:

Thunderstorms; chilly days, when the "winter overcoats and heavy underwear" recommended in the Daily Bulletin of the Excursion were very welcome; cold nights, with frost and thin skims of ice on standing water; snow squalls; bright, clear, crisp mornings and evenings, with warm noons (diurnal ranges 25°-30°) when ulsters were a burden, even on the drives; nocturnal radiation fogs;2 and a diurnal variation in wind velocity so marked that driving through the forests was a relief after being in the open, and that it was dangerous to go near the edge of the cliffs at the Canyon of the Yellowstone. Thus was this interesting week made up, under varying evclonic and anticylonic controls-a week of typical "mountain and plateau" weather in the month of September. Many of the types recalled New England October or November weather. So heavy was the frost one night that when it melted on the tops of the stages under the morning's sunshine there was a veritable little shower of raindrops. Dust there was none until the last day, thanks to the recent rains. Official Weather Bureau records of rainfall are maintained at Mammoth Hot Springs (mean annual, 18.80 inches), but it needs only a hasty glance at the vegetation, while driving, to show that there are very considerable differences in the rainfall in different portions of the park, as there must also be in snowfall. Sagebrush and bunch grass indicate semiaridity in places, while the higher slopes and summits have heavier precipitation. One fact of meteorological and of scenic interest impressed itself upon the mind of the writer. The "steam" from hot springs and geysers must be much greater in amount in cold and damp weather. Hence it is reasonable to infer that hot, dry days ought to give the clearest views of these phenomena.

Yellowstone National Park to Seattle.—From the Park, northwest and west, on the Northern Pacific Railroad, through green and fertile valleys, with crops of wheat, alfalfa, oats, potatoes, and other produce; with irrigation here and dry farming there, the journey was continued toward the Pacific coast. The traveler must beware lest he carry away a mistaken impression regarding the availability of this section for agriculture. The railroad naturally follows the valleys, which are damp, irrigable, and well settled, and have fairly abundant tree growth. But back of the obvious valleys there are the less obvious bench lands, where dry farming is now being practiced, and where the trees are struggling up the small side canyons and gullies. And then back still farther there come the still less obvious stretches of semiarid sagebrush, treeless country, non-irrigable, not adapted to dry farming, and suitable only for stock. Probably about one-fourth to one-third of Montana is actually available for farming.

Dry farming is farming without irrigation in a country where the rainfall is too small for successful agriculture unless this rainfall is cared for and conserved in a special and peculiar way. The problem is essentially climatic. It becomes, also, a problem of soil preparation, and of the proper selection of seeds and crops. But, given enough and well-distributed rainfall, there would be no dry-farming problem. Breaking up the hard subsoil so as to give the rainwater a chance to penetrate; keeping a thin, loose mulch on the surface to check evaporation; spring plowing,3 so that the stubble may hold the winter snows; cultivation immediately after the plowing; a selection of crops which will ripen quickly, will come

A killing frost had been reported at Mammoth Hot Springs, Aug. 31.
 Supplied, in part, near the hot springs and geysers, by "steam."
 This becomes fall plowing in districts of winter rains. Fall-sown cereals take nearly a year to ripen.

nearest to maturity during the rain season, and which, being drought resisting, can wait until rains come these are some of the simple and essential methods in dry farming. Soil properly treated by these methods, under favorable conditions, is damp down to 6 to 8 feet, or even 10 to 12 feet.

There are other problems for this region. There is the question of the permanence of dry farming. A steady succession of crops dries up the soil in a few years, whence arises the need of manuring and of cropping in alternate There is also the desirability of tree planting, and thus of making the farms more homelike and attrac-While there is in western Montana to-day two or three times as much dry farming as of irrigated farming, the dry farming is all of such recent date that there are a good many questions concerning it which time alone can answer One thing is sure: There is a pretty definite limit to the amount of land which can be irrigated. Water will not be available for any more. Land which can be irrigated is naturally worth a good deal more than that which can Thus, in this western Montana country, irrigated lands sell for from two to four times as much as the best "dry" lands. Dry farms require a large area. Hence modern agricultural machinery is a necessity, and its use is greatly facilitated by the absence of irrigating The best advice which can be given to any farmer in this semiarid country is: "Wherever you can irrigate, irrigate; if you can not irrigate, dry farm." to the mean annual rainfall limits for dry farming in western Montana, it is difficult to give an exact figure. Perhaps 12 to 13 inches would be a fair estimate, but topography, winds, slope, soil, and other factors are important controls and warn us against attempting too close an estimate. Where the soil is rich, and the farmers are skilled in dry-farming methods, as is the case in eastern Washington, for example, with the German-Russians, dry farming has succeeded with less than 15 inches of rainfall. An excellent statement of the general economic and climatic status of dry farming has been given by Prof. W. M. Davis in the following words:

It has not yet been tried through a long enough period to make sure that it is more than a precarious occupation, sometimes profitable, occasionally disastrous; it is invited more by the low price of arid lands than by the certainty of crops; it can be best practiced by those who have enough hope or capital to survive one or two years of failure with two or three of success.

Across this inspiring Montana country—inspiring because of its ruggedness and the splendid energy of its people—over the "Great Divide"; through Butte with its clouds of smoke and gigantic mining operations, and Missoula with its irrigated fruit orchards, the train hastened on its westward journey in wonderfully clear anticyclonic weather, across the northern tip of Idaho into Washington, whose home name, the "Evergreen State," clearly indicates one of the essential results of its climate.

In eastern Washington, on the fertile soil of the decomposed lavas, Spokane, with a mean annual rainfall of about 18 inches, and a rainfall in April, May, and June of less than 5 inches, is the center of a district of wonderful agricultural prosperity. From Almira, somewhat west of Spokane, an excursion was made by motors through a dry-farming district where remarkable success has recently been attained with wheat in a district with considerably under 20 inches of rainfall a year. There is no water available for irrigation over these wheat fields. It must be dry farming or cattle. On a glorious day

with clear skies, except for the soft haze which added a charm to the distant view, and with a rapid diurnal warming, the party had an opportunity to witness harvesting by means of the latest horseless combined reaper and harvester ("caterpillar"), as well as by means of one of the older machines drawn by 24 horses. Here, a few feet under the surface, the soil was tested and found damp, while above it there was thick dust. Here were seen acres and acres sown to wheat, yielding 20 to 25 bushels an acre, and giving (at present) good crops about four years out of five. Here the wheat is left piled up on the fields, without fear of rain. Here, around the farmhouses, trees have been planted, and windmills pump water for domestic use and for farmyard irrigation. Here, in the Grand Coulee, at the Baldwin Ranch, the excursion party enjoyed true western hospitality so generous and so whole-hearted that the day will live always in the memory of those who were privileged to be there. At Coulee City itself irrigation by pumping ground water has brought phenomenal success in fruit raising. What was three years ago a sagebrush desert is

to-day a thriving peach orchard. Dry farming has been very successful over much of the West, but there is a limit to it. The journey southward on the treeless lava plateau of Washington, across the Columbia River at Pasco, and then westward and northwestward up the valley of the Yakima River, brought the train into a district, in the lee of the Cascade Mountains, where the annual rainfall varies between 7 and 13 inches, according to topography and elevation. It is here that man has turned the desert into one continuous garden. Here the wonderful orchards of apple, peach, and pear trees, the fields of hops and alfalfa, and the vineyards, reaching for miles and miles in every direction, make the traveler realize that the glowing accounts which have been printed of this region are not so greatly exaggerated after all. Up on the summits and upper slopes of the Cascades there is a rainfall 10 or 15 times as great as that in the valleys at the eastern basea rainfall resulting from the presence of the mountains in the path of the rain-bringing westerly winds. It is this water which has been collected for the use of man in the Yakima irrigation projects. When completed, these projects are designed to supply water for 500,000 acres, and it is estimated that there will be enough water to irrigate all the arable land in the valley. Irrigation is but an expression of man's dissatisfaction with the amount or distribution of the local rainfall. At North Yakima man has expressed his dissatisfaction most emphatically by planning these great irrigation works which have revolutionized the whole settlement and use of that particular section. The interest of the climatologist in this Yakima country is not so much in the number of carloads of fruit which are sent out daily, or in the value of the land, or in the size of the apples, pears, and peaches. His interest is rather in the relation of the dry, leeward "rain-shadow" valleys to the well-watered mountain summits. By reason of their altitude and location, these mountain summits receive the heavy precipitation which largely makes up for the deficiency of rainfall in some of the lower valleys to leeward. There is here an interesting example of the compensation which is sometimes seen so clearly in climatology. Very bright is the future of the Yakima Valley. Canning and evaporating plants will soon be built, and where there is now terrible waste of fruit not in condition to ship, there will soon be a complete utilization of the crop.

¹ The cue to this selection comes from the native grasses, which grow mostly in spring and which can "wait" for moisture.

From North Yakima, past the orchards and fertile fields of Ellensburg, and then across the Cascade Mountains, the journey gave clear views of the treelessness of the lower lands on the east, except where windbreaks and orchards have been planted under irrigation; of the interesting overlapping of the forests from the rainy, western slopes into the higher portions of the eastern valleys; and then of the densely forested western slopes, with their waterfalls and water power, down which the train de-

scended on its way to Seattle.

The Pacific coast—Seattle to San Francisco.—Nine rainless and mostly cloudless days, ideal for traveling and for sightseeing, were spent on the Pacific coast. Very striking was the contrast between the cool, tonic air of the Yellowstone National Park, closely followed by the hot and dry air of the dry-farming country around Almira, and then by the damper and more muggy marine climate of Seattle. There are impressions of Seattle's parks with their beautiful flowers, and grass and shrubbery, visited on a warm anticyclonic day with northeast (offshore) winds and a hazy atmosphere;1 of the steamer trip to Tacoma (Sept. 14), with strong easterly winds on steep anticyclonic offshore gradients; of the "unusually hot day for Tacoma," as described by the reception committee there; and the striking illustration of the lumber industry seen in the huge Douglas fir, over 9 feet in diameter, sawed up for the benefit of the party at a Tacoma lumber mill. There was regret that the haze prevented good views of Mount Rainier. Most of the excursion party would probably agree with the sentiment, painted in large letters on a Tacoma signboard: "The Puget Sound Country—Land of Perfect Summers," and would, even after one visit, think Portland well named the "rose city. A trip to The Dalles of the Columbia River and their famous non-irrigated fruit orchards gave opportunity for contrast with the irrigated district at North Yakima. The strong down-valley wind, on steep anticyclonic gradients, was thick with blowing sand, and clearly showed the need of the fences which have been built across the dunes to keep them from burying the railroad tracks. The change in the character of the vegetation as one journeys from The Dalles down the river to Portland is an excellent "car-window" observation of the increase of rainfall, which just about trebles between The Dalles and Portland (15 to 45 inches).

At Medford, in the Rogue River Valley of southern Oregon, there is another remarkable fruit district. mean annual rainfall is not far from 30 inches, and the fruit growers differ in their views as to the advantages of irrigation. Some irrigate; others do not. The natural vegetation of the district is sparse and economically worthless, but fruit trees (chiefly apples and pears) and alfalfa are replacing the so-called "desert," and Medford is now the center of a properous and contented community. So abundant is the fruit crop that weeds are sometimes allowed to grow among the trees to keep them from bearing too heavily. The campaign against frost, which is the most serious climatic obstacle to fruit growing, is in excellent hands. Dr. P. J. O'Gara has charge of the local "special" Weather Bureau station at Medford, and has been taking an active part in "frost fighting," studying local frost conditions, making frost forecasts, and experimenting with the most effective methods of protection. "Smudging" is here done with crude oil, and the orchards are all provided with oil tanks, filled and ready for use. A motor trip from Medford to Crater Lake, in

ideal weather conditions, gave a good sample of the strong diurnal ranges of temperature characteristic of mountain climates, and of their crisp, fresh air of early morning and late afternoon and night. At Crater Lake itself a few patches of last year's snow were still to be seen, as well as freshly-fallen snow of recent date.

South of Medford the train passed through orchards and vineyards, with a climatic industry well illustrated in the sun drying of peaches; across the Siskiyou Mountains, with their cool air and magnificent views, and then (by night) down the western side of the valley of California to San Francisco. Wind-blown trees clearly showed the prevailing up-valley winds (southerly). After the wellwatered and forested shores of Puget Sound, the absence of tree growth around San Francisco Bay was striking. But the Californians are sure in their estimate of their climatic blessings, as evidenced by the sign: "Crops without irrigation. Ideal climate. Inspiring scenery in Napa County. San Francisco itself was uncomfortably warm on September 19, with a maximum temperature of 80° and light northerly winds.

An excursion to Mount Tamalpais (Sept. 20) gave a splendid opportunity to see the famous fogs of San Francisco Bay, which have been so thoroughly studied and so well photographed by Prof. A. G. McAdie. Even the hurried observations made by a traveler showed the "sea of fog" over the ocean; the fog rolling over the tops of the coast hills and dissolving on the lee side; the west wind bringing in the fog through the Golden Gate, into the bay, where it gradually dissolved; the "spilling over" of the fog across the coast mountains where there were gaps, while elsewhere the range made a sharp dividing line; and the "fog billows," so well described by Prof. The chill of the cool wind from the ocean was McAdie. keenly felt, and the need of overcoats emphasized one well-known feature of San Francisco climate (maximum temperature Sept. 20, 68°). Another cloudless day, at San Francisco and Berkeley (Sept. 21) again brought the fog over the ocean; the low temperatures with the westerly wind; the evident inshore transportation of fog particles and dust and smoke from San Francisco across the bay, and the characteristic cool late afternoon and evening

San Francisco to Denver.—Early on the morning of September 22, a splendid type of anticyclonic weather, the special train of the American Geographical Society began to ascend the western slopes of the Sierra Nevada Mountains on the eastward journey from San Francisco to Salt The vineyards, the orchards, and the orange Lake City. groves; and then the forests-too often recklessly cut away-of the higher slopes bore witness to the fact of a sufficient and well-distributed water supply.2 We need no meteorological tables to assure us that these mountains are admirably situated to give us an example of the increase of rainfall with altitude. If we desire the numerical proof, we have it in the records of mean annual rainfall between Sacramento and Summit. Between these two stations there is an increase of rainfall of about 0.4 inch for every 36 feet of elevation. The rate of increase is greatest at about 1,000 meters, and becomes negative above 2,000 meters. The mean annual rainfall at Sacramento is 19.46 inches; at Summit (7,017 feet) it is 48.07 inches.

The higher elevations have very heavy snowfall. At Summit the average annual fall of snow is 36 feet (433

¹ Maximum temperature 76°; minimum, 62°; Sept. 13.

¹ On this same day Fresno had a maximum of 98°; Los Angeles of 100°; Sacramento of 94°. It was thus distinctly a warm spell over this general region.

³ The traveler from the east, on reaching Colfax, is greeted by the sign at the railroad station, "You are now in the rich and fertile Sacramento Valley."

inches). Twice in 33 years the amount has reached 65 feet (775 inches). The heavy snowfall has necessitated the construction of about 40 miles of snowsheds over the tracks of the Southern Pacific Railroad, and to the establishment of an elaborate system of watchmen and of "fire trains" to keep these sheds from being destroyed by fire. From Signal Peak nearly all of the snowsheds can be seen by the watchmen, who are always on guard there, and at their summons the "fire trains," consisting of tank cars filled with water, kept ready day and night, are run at high speed to the scene of the fire. These fires, it may be noted, are not usually due to the locomotives. The snowsheds, and these precautions against fire, as well as the snowplows, involve a heavy expense on the part of the railroads—a splendid illustration of a climatic control over railroad operation.

Traveling through these many miles of snowsheds is far from agreeable. The view is greatly obstructed, and the smoke from the oil-burning locomotives makes the air unpleasant to breathe. Yet these very discomforts only serve to emphasize the climatic lesson which the sheds teach—the lesson of heavy snowfall, on the upper slopes of a high mountain range, near the ocean, in the path of the prevailing westerly winds. Truly well named were the Nevada mountains.

From the crest of the Sierra Nevada the descent into Nevada is rapid. Similarly, the change in rainfall is rapid. The traveler can not fail to notice that the snowsheds extend a much shorter distance east of the crest of the mountains than to the west (windward). fore infers at once that the amount of snowfall decreases rapidly on the eastern (leeward) side of the summits. The green slopes and forests of the west are replaced by the sagebrush and allied forms of vegetation on the east. From a rainfall of 50 inches at Summit we descend with startling suddenness into the Nevada desert, with its alkali flats, its dust, and its less than 5 inches of rainfall, but also with its green oases of irrigation with their trees and cattle. Two days in and about Salt Lake City (Sept. 23-24) gave opportunity to see what has been accomplished in the home and center of modern irrigation undertaking in the United States.

Utah must always have a very peculiar interest for any traveler who is in search of climatological facts, for here is Great Salt Lake, with the inevitable reminder of its great ancestor, Lake Bonneville, and here was the beginning of modern irrigation in this country. Salt Lake City, Ogden, and Provo are all irrigated oases, but dry farming is also practiced to some extent, as, e.g., between Salt Lake City and Provo, where fruit, sugar beets, alfalfa, and vegetables are the chief crops under a mean annual rainfall of about 14 inches. Two of the days (Sept. 24-25), with fresh and cool northwest wind and fair skies, were a fine type of autumn anticyclonic weather over the Great Basin, "light overcoat weather," if we use the convenient overcoat scale for temperature. "Protect 36-hour shipments against 40° in all directions" was the Shippers' Forecast on the Salt Lake City map for September 23. On the map for September 24 it was stated:

The northwestern high pressure is spreading eastward and southward, and causing cooler weather practically everywhere in the Rocky Mountain, Great Basin, and Pacific States; and in Utah this fair, cool weather is expected to continue for at least 36 hours, with heavy frost and freezing temperatures to-night in exposed localities.

The local salt works on the shores of Great Salt Lake furnished a good illustration of the application of climatology to human industry. Here almost ideal conditions of natural evaporation, under the bright sunshine, give quick drying. The less favorable climatic conditions for evaporation at the salt works at Syracuse, N. Y., were naturally recalled.

The fruit orchards and green fields and shaded streets of Grand Junction, Colo., stood out in sharp contrast against the naked cliffs in the background. Gray and bare and useless for agriculture is all that district except where it is irrigated.

Two of the Government irrigation projects are in this region. Cattle and sheep manage to find sustenance where fruit and trees and cereals can not grow, and in live stock western Colorado has found much profit. Water power in increasing amounts is being furnished by the streams which descend from the rainier mountains into the drier valleys. Fine clear days, with crisp mornings and evenings and warm noons, marked the trip through this district. That the nocturnal minima had fallen below 32° was abundantly proved by the frozen crops. A glorious day (Sept. 27) for the trip across the Continental Divide (Hagerman Pass) was favorable for observations of "car-window" climatology. The increasing tree growth with increasing altitude pointed to increasing rainfall. Patches of snow on north slopes emphasized the low temperatures and the importance of exposure. The long icicles on the water tanks and the ice coating on standing water gave non-instrumental records of temperatures below freezing, lasting for some hours. Wind-blown trees indicated prevailing westerly The diurnal variation in wind velocity was a marked and natural consequence of the weather type and of the topography. Snowsheds again called attention to the handicap of deep snows. South Park, with its level, green fields, and its surrounding snow-covered mountains attracted attention to the importance of Colorado's natural parks as grazing areas, and as present and future health and pleasure resorts.

One of the picture post cards commonly sold in Denver represents a map of the United States, all in dark shading with the exception of one bright yellow, sunny spot around Denver. Underneath are the words: "See that spot? That's it." To the great regret of the reception committee of Denver citizens, the day in that city (Sept. 28) was chilly, cloudy, and unsettled, with cold northerly winds, followed by rain in the evening. It was distinctly "winter-overcoat" weather. This cloudy and rainy spell came in the southern and southwestern quadrants of a well-developed anticyclone, and gave rain the next morning during the trip through the Royal Gorge of the Arkansas, the day continuing cool and overcast. In eastern Colorado the irrigated fruit orchards and fields of Canyon City and of Pueblo, and the green and fertile belt in the valley of the Arkansas, were good types of the irrigation which extends along the eastern base of the Rocky Mountains. The importance of the sugarbeet industry was evident in the sugar-beet factories and in the freight trains all loaded with the beets. It was easy to see why disputes have arisen between Kansas and Colorado regarding water rights in the Arkansas River. Colorado makes great demands upon the river before Kansas ever has an opportunity to take water

New Mexico and Arizona: Raton to Phænix.—"Through a semiarid and monotonous country, which, however, makes some response to irrigation." Thus Baedeker's "United States" describes the railroad journey through

¹ Maximum temperature 48°.

New Mexico. Semiarid, yes; but monotonous, never! Those vast stretches with their yucca, and cactus, and artemisia, and bunch grass; with their foothill covering of piñon and dwarf cedar; with their brown, gray, and red mesas and rolling hills and mountains; with their adobe houses and scattering settlements and struggling trees wherever there is water; with their historical associations of the past in their cliff-dwelling and ancient pueblos, and their promise for the future where water is being supplied; with their baking sunshine and fitful rains; their varying lights and shadows; the afternoon clouds on their mountains; their wonderful sunrises and sunsets; the crispness and freshness of early morning and late afternoon and night; the inspiration that comes from their vastness and their loneliness! can even the casual traveler who crosses these great States on the fast trains of the Santa Fe or of the Southern Pacific find the journey monotonous? Surely, the stamp of aridity is everywhere. It has made its mark on nature and on man, and on all the activities of man. But a desert is no more monotonous than are green fields, or vast forests, or the waving wheat of our prairies. Grim, indeed, are these plateaus and mountains. Vast they are, but monotonous, never. The desert has a charm peculiarly its own, and happy are those who feel it. "Arizona: the Sunset Land." Thus has it been called, and truly does it deserve its name. Wonderful has been the effect of this southwestern climate upon the unfortunate "lungers" who have here found health and strength.

An excursion from Santa Fe to a neighboring pueblo inevitably brought up the problem of the former larger population of this region, and the possible reasons for the abandonment of the ancient dwellings. Climatic "change" seems to offer the simplest solution of this problem. But is it the only one? The trip by wagon from Adamana to the Petrified Forest, chiefly of geological interest, nevertheless gave the excursion party, on the hot and dusty drive, a fine example of the strong diurnal variation of temperature characteristic of our Southwest. No finer display of cumulus and cumulo-nimbus cloud development could have been desired than was witnessed during that day—the typical cloud processes of our arid region. The deep sand "washes" on both sides of a typical stream channel, which forced most of the party to walk in order that the wagons could be drawn across, drew attention to the floods of these desert streams in "cloudbursts," chiefly in July and August. Wells have been dug here and there along the river bottoms, and water has been found in sufficient quantity for domestic purposes and for the use of cattle and sheep. Arid and unpromising this country looks as pasture land, with its rabbit brush and other characteristic vegetation. But it is, and will be, a stock region of some importance. It can never be a farming country. There is enough natural pasturage for a limited number of cattle, but this number must be limited; otherwise overstocking and deaths by starvation will result.

At "Sunshine" station—well named, indeed—there was standing a long train of tank cars full of water which had been brought 50 miles down the line. From the bottom of the tanks the water flowed into a sluiceway, and thence into a large underground tank, from which it was pumped by means of an engine to an elevated tank, above the track, for locomotive purposes. Thus man has to plan and to provide what nature has not given him. Who can adequately describe the glorious wonders of the Grand Canyon—its grandeur, its coloring, its impressiveness? Surely, much of this glory must be

attributed to atmospheric conditions and phenomena—to the dryness and the clearness of the air, far from city smoke and soot; to the wonderful cloud effects; the changing lights and shadows; the distant showers; the rainbows; the sunrise and sunset colors, and, in winter, the snows. The guidebook tells us that we ought to visit the canyon—

in the early spring, before the hot season and the rains of July and August arrive. Although in the winter months, preferably December-January, while the keen, thin, cold air makes the driving and horseback excursions less agreeable, the effects given by cloud and snow under the brilliant skies are varied and striking.

A very real appreciation of meteorological conditions is contained in these sentences, but no traveler should be deterred from visiting the Grand Canyon at any season. There is never a time when the varying play of the weather elements does not give beauty and variety in that wonderful region, and never a time when these elements combine to give any long-continued serious discomfort.

Phoenix, Ariz., was the southwestern terminus of the transcontinental excursion; Phoenix, surrounded by those great stretches of Arizona desert, with their giant cactus and their mesquite shrubs, and itself green and smiling and very prosperous in the midst of its palm trees, its wheat, barley, and alfalfa fields, and its wonderful crops of oranges, peaches, olives, grapefruit, figs, pears, plums, dates, melons, and sugar beets. Very striking is the sight of the giant cactus—the lingering representative of the former desert—standing in the newly irrigated fields, its base hidden in the damp green alfalfa: the old and the new.

The visit to Phoenix, Ariz., and an excursion to the Roosevelt Dam emphasized some important facts in Arizona climatology. Southwestern Arizona is extremely arid. Yuma, for example, has an average annual rainfall of only slightly over 3 inches. There is thus far too little water for agriculture in any form without irrigation. But Arizona is not all as near the sea level as is its southwestern corner; it is fortunate in having its mountains and its plateaus. Over these forested mountains and plateaus fall the rain and the snow which is of such vital importance in irrigation. If Arizona were all lowland it would be a very hopelessly dry region. The rainfall varies almost directly with the altitude. From a mean of less than 5 inches in the southwest, the amounts increase to about 8 inches at 1,000-2,000 feet; to about 12 inches at 2,000-4,000 feet; to over 14 inches at 4,000-6,000 feet; and to 16 to 20 inches at altitudes of over 6,000 feet. It is thus over the higher country of Arizona that we find the so-called "islands"—they might better be called "lakes"-of heavier rainfall seen on the detailed rainfall maps. From these "lakes" flow rivers. rivers, when dammed, as in the case of the Salt River by the Roosevelt Dam, supply water enough to irrigate thousands of acres.

The trip from Phoenix, in the Salt River Valley, up into the mountains to the Roosevelt Dam, was made on October 4. While two rather heavy showers were encountered before the lower, level country was left behind, it was clear from observation of the clouds that the mountains were receiving far more rainfall than the valley. At the dam, 24 hours of heavy rain prevented the party from returning to Phoenix until a day later than had been planned, the journey back being too dangerous, if not impossible, for motors. This long, dreary day at the Roosevelt Dam taught an important climatic lesson. It emphasized most strikingly the value of Arizona's mountains in supplying the water which the State so greatly

needs. The value of this one spell of rainy weather to the farmers and fruit growers of the Salt River Valley was surely to be reckoned in thousands of dollars. Phoenix receives, on the average, less than 8 inches of rainfall annually. Over the watershed behind the Roosevelt Dam about 12 inches fall. These 4 inches seem relatively insignificant. But it is just these 4 inches, resulting from the difference of altitude, which, when carefully collected and stored and wisely distributed, make the glory of the Salt River Valley, of which Arizona is so justly proud.

For a week, from September 30, the excursion party was in the "deserts" of New Mexico and Arizona. fell on five of these days. At Santa Fe, on the afternoon of September 30, there was a shower between 3 and 4 p. m., following the growth of massive cumulus, and later of cumulo-nimbus clouds over the mountains during the morning hours. On the afternoon of October 1, while an excursion was being made from Sunshine Station to Crater Butte, there was again a wonderful development of cumulo-nimbus clouds which resulted in many showers of short duration—those fitful, uncertain showers which are so characteristic of the more arid portions of our country, and which are followed by such a wonderfully refreshing smell of wet soil. October 2, at the Grand Can-yon, brought a heavy thunderstorm between 7 and 8 a.m. On October 3, also at the Grand Canyon, a thunderstorm occurred in the evening. On October 4 there were showers in the early morning, and during the motor ride to the Roosevelt Dam showers interfered with the outdoor luncheon generously provided by the citizens of Phoenix. The heavy rains of October 5 were referred to in the preceding paragraph. All these rains came as a surprise to the party. To experience a heavy thundershower at Sunshine seemed a contradiction of nature. Being in a "desert" region, no rain was expected. In fact, these New Mexico and Arizona rains were almost the only rains which were met with in the long trip of eight weeks. They were, therefore, of singular interest.

To the excursion party the best definition of a desert seemed to be this: A place where it rains when you are there, and where it is dry the rest of the time. "Prepare for dust" was the advice given to the party when it started on the motor ride to the Roosevelt Dam, but raincoats, not dusters, were the real need.

Taken in the large, there are two rainy seasons over this New Mexico and Arizona country. One of these—the most marked—comes in July and August, extending in places into early September. These rains are essentially local, mountain, or convectional rains. The other rainy season, which is less marked, comes in the colder months and results from the passage of the usual cyclonic storms of the winter. An examination of the daily weather maps shows that the showers of September 30 and of October 1 were local, and not part of any general cyclonic disturbance. On October 2 there was a considerable area of unsettled weather in the far Southwest, but no general rains. The thunderstorm of October 3 was again purely local. On October 4 a trough of low pressure extended from north of North Dakota southwest to the Pacific coast, with a good deal of cloudiness and scattered thunderstorms. In the 24 hours ending at 8 a.m. October 5 Santa Fe received 0.56 inch; Flagstaff, 1.78 inches; Yuma, 0.04 inch; and Phoenix, 0.14 inch. The all-day rain at the Roosevelt Dam on October 5 was part of a general storm which had developed from the unsettled conditions of October 4, and at 8 a. m., covered the Plains States, and the central Rocky Mountain and Plateau regions, accompanied by widespread rains and

snows. The disturbance was central over Utah and Colorado. During the 24 hours ending at 8 a. m., October 6, Santa Fe had received 0.04 inch; Flagstaff, 0.34 inch; and Phoenix 0.06 inch. The rainfall at the Roosevelt Dam, not reported on the weather map, was much heavier than that at Phoenix. Thus the rains which were experienced in New Mexico and Arizona afforded an excellent illustration, as we might say, of the precipitation conditions of the two rainy seasons in this "desert" region—the local showers of summer, and the general rains of the colder months. The excursion party of the American Geographical Society was singularly fortunate in having this interesting experience in the rainy desert.

To a superficial observer of these deserts it seems as if irrigation must completely and successfully solve man's agricultural problems. But here, as everywhere, the apparent solution of one problem gives rise to other new and unexpected problems. Nowhere is there lack of struggle. The rise of the ground-water level as the result of irrigation causes a deposit of alkaline salts on the surface. Thus the irrigated desert has in places become an alkaline desert. So the ground-water level must be kept down by pumping, and the pumped water, in order that the excess of salts may be neutralized, must be mixed with fresh water before it can be used for irrigation. The irrigation canals are bordered by weeds. From these, seeds drop into the water and are distributed over the fields and through the orchards, giving rise to another new problem. Thus the eternal struggle of man against nature goes on in varying phases.

Phoenix to New York. A series of climatic "snapshots," taken in quick succession on the run from Phoenix to Memphis by way of Kansas City, summarized much that had been previously observed in a more leisurely way. From the semiarid Southwest to the humid East, from the land of sunshine and cactus and of irrigation to the land of cotton and forests, mighty rivers, and abundant rainfall, what a change! In recalling that flying trip one thinks of the snow and the cold at Flagstaff (Oct. 7); the evidence of recent heavy rains in the muddy streams and the pools of water standing on the desert; the curious dense fog near Adamana (Ariz.), in the damp, cool morning air; the stock pens and loaded cattle cars; the irrigation in the Rio Grande Valley; the last wonderful desert sunset in New Mexico, which drew every member of the party to the observation platforms to watch the brilliant colors in silence. Then came, in quick succession, the irrigation and good crops in the Arkansas Valley in western Kansas and the dry farming back from the river, with the scattered farmhouses and windmills and the very few trees; the sense of infinite distance on the Great Plains, but the lack of the romantic charm of the Southwest; the crossing of the historically critical one-hundredth meridian; the gradual but perfectly evident change from treelessness, dry farming, and many windmills to bigger fields, better crops of corn, sorghum, and winter wheat, larger, more frequent and more effective wind-breaks, more native trees, fewer windmills, continuous farms, more towns, more people, greater prosperity. Thus Kansas City was reached in the late afternoon of October 8.

The rest of the story is soon told. On the journey from Kansas City to Memphis the cotton fields, abundant tree growth, lumber mills, woodworking industries, and an ice plant gave clear indications of a warm climate and of abundant rains. A muggy morning in Memphis contrasted strongly with the dry, invigorating air of Arizona. A trip down the Mississippi to Helena (Ark.) on a beautiful October afternoon gave glimpses of cotton bales,

broken levees, and of Government works, "snagboats" and dredgers at various points, perhaps suggesting to more than one of the party that the place to control the floods is on the headwaters of the tributaries, not on the lower portion of the Mississippi itself. Cotton picking was seen on the journey across northern Mississippi and western Alabama, to Birmingham, on a hot, muggy day (Oct. 10), with southerly winds. Going north up the valley to Chattanooga the gradual decrease in cotton acreage was noticeable. A few hours in Asheville served to show the natural topographic and scenic advantages of that well-known health resort—far enough south to escape the deep snows, severe cold, and gray skies of the northern winters; far enough north, and high enough above sea level, to furnish a comfortable summer resort for those from the south. Singularly favored thus is Asheville, with the soft outlines of its forested mountains, its clean, pure air, its sunshine and its midway location between the extremes of north and south. Down the eastern slopes of the Appalachians and out through the Piedmont the journey continued, the forests, about equally heavy on both western and eastern slopes, showing that these mountains are not an effective climatic divide. The last day on the special train (Oct. 12) took the party through the beautiful orchards and farms of the Piedmont region, Virginia, and ended at Washington. On October 18, in New York, the party disbanded, on schedule time, exactly as planned many weeks before.

The members of the transcontinental excursion party, each in his own way, profited immensely from the trip. Geological, physiographical, botanical, ethnological, and other studies were made by its members, as their own interests or opportunities prompted them. But in the mind of the writer the great facts of weather and of climatic control, always, everywhere, were the most interesting study of all.

CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting the greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest

and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, DECEMBER, 1912.

Temperature and precipitation by sections, December, 1912.

			Tempe	eratui	re (°F.	.).					Precipitation (incl	nes and	hundredths).	
Section.	age.	from		Mon	thly e	extremes.			average.	rture from normal.	Greatest monthly	7.	Least monthly.	
Section.	Section average	Departure from	Station.	Highest.	Date.	Station.	Lowest.	Date.	Section ave	Departure the norm	Station.	Amount.	Station.	Amount.
Alabama. Arizona Arizona Arizona Arizona Arizona Arkansas California. Colorado Florida. Georgia. Hawaii (November) Idaho Illinois. Indiana Iowa Kansas Kentucky Louisiana Maryland-Delaware. Michigan Minnesota. Mississippi Missouri. Montana. Nebraska. Newada. New England New Jersey New Mexico New York North Carolina North Dakota Ohio Oklahoma Oregon. Pemsylvania Porto Rico South Carolina	47. 7 40. 1 41. 7 21. 2 62. 3 70. 9 63. 1 33. 2 9. 2 34. 9 37. 2 51. 2 36. 5 2 28. 6 4 7. 1 36. 5 2 2 9. 4 31. 7 9. 9 4 7 1. 8 8 1. 5 1. 6 1. 6 1. 6 1. 6 1. 6 1. 6 1. 6 1. 6	+ 1.1 - 3.9 - 0.6 - 3.9 + 4.8 + 2.4 - 0.5 + 3.9 + 3.6 + 2.4 - 0.7 - 0.2 + 4.0 + 5.6 - 2.9 + 4.5 - 3.7 - 4.0 - 4.5 - 5.6 - 2.9 + 4.5 - 6.1 + 2.9 + 3.7 - 6.1 + 2.9 + 3.7 - 6.1 + 3.7 - 6.1 + 3.7 - 6.1 + 3.6 + 3.7 - 6.1 + 3.7 - 6.1 - 7.1 -	Troy. 2 stations England. King City Monument. 4 stations 2 stations Pahala, Hawaii Lewiston. 6 stations Vevay Keokuk 2 stations Scott. Reserve. Emmitsburg, Md. Allegan Pipestone Waynesboro Gano. Heron. 2 stations Jean. Chestnut Hill, Mass. 2 stations Bell Ranch Waverly Tarboro. Medora Thurman Healdton Marshfield. Coatesville Comerio Flats 3 stations	82 80 76 89 70 86 83 92 61 64 64 64 70 73 79 72 66 68 68 75 67 80 72 74 72 66 67 71 93 79 79	3 1 19 7 24 4 4 7 21 3 5 5 5 5 14 1 16 7 4 4 14 3 3 5 5 5 11 11 23 11 11 11 11 11 11 11 11 11 11 11 11 11	Riverton Springerville Dutton Tamarack. Fraser Garniers. Gore Humuula. Pierson. Dakota. Auburn Inwood. Oketo 2 stations. Grand Cane. Oakland, Md. Bergland 2 stations. Corinth. Grand City. Bowen 2 stations. San Jacinto 2 stations. Layton. Virsylvia Lake Placid Club. Bamners Elk. Willow City. Bellefontaine. Kenton. Seneca Poeono Lake. Maricao Greenville.	14 -12 -8 -8 -34 -24 -24 -13 -22 -2 -2 -13 -25 -16 -10 -14 -25 -16 -15 -16 -28 -16 -28 -16 -25 -16 -16 -16 -16 -16 -16 -16 -16 -16 -16	13 23 9 6 26† 28 14 24 20† 12 23 6 6 12 28 26 6 12 22 23 13 12 25 5 6 22 22 13 12 22 13 12 23 14 24 12 25 11 26 12 27 12 27 27 27 27 27 27 27 27 27 27 27 27 27	6. 51 6. 62 2. 63 1. 58 6. 42 1. 75 6. 42 1. 75 6. 35 1. 41 6. 35 1. 41 6. 93 1. 41 6. 93 6. 42 6. 93 6. 42 6. 93 6. 42 6. 93 6. 42 6. 93 6. 42 6. 93 6. 43 6.	- 0. 65 - 0. 67 - 0. 47 - 1. 27 - 1. 42 - 0. 45 - 0. 49 + 0. 23 + 7. 36 + 0. 49 - 0. 66 - 0. 32 - 1. 58 - 0. 32 - 0. 45 - 0. 12 - 0. 37 - 0. 12 - 0. 37 - 0. 06 - 0. 66 - 0. 61 - 0. 63 - 0. 64 - 0. 61 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 63 - 0. 64 - 0. 66 - 0. 66 - 0. 67 - 0. 6	Demopolis. Chlarsons Mill. Portland. Weitchpee Gladstone. Hypoluxo. Marshallville Hakalau. Grand Forks. Rileyville. Scottsburg. Northwood. Chanute. Franklin. Donaldsonville. Sudlersville, Md. Calumet. Duluth. Woodville. Caruthersville. Saitese. Arden. Spooners Ranch. Hyannis, Mass. Dover. Hachita. Southampton. Highlands. Bottineau. Milligan. Calvin. Happy Home. Pocono Lake. Rio Grande. Beaufort.	11. 34 2. 18 6. 49 15. 59 2. 11 8. 43 3. 26 3. 26 1. 75 1. 12 28. 03 2. 82 3. 26 1. 75 1. 12 2. 36 1. 74 2. 36 1. 10 1. 10 1. 3 1. 3 1. 3 1. 3 1. 3 1. 3 1. 3 1. 3	Alaga 3 stations. Rogers 40 stations	2.022.00 0.000 0.000 0.000 0.636 1.000 0.136 1.020 0.120 1.020 0.120 1.020 0.0000 0.000 0.
South DakotaTennesseeTexasUtah	40.3	+ 0.2	Hermosa 2 stations Bay City Emery	69 71 88 66	13 5† 5 3	Roslyn Mountain City Dalhart Strawberry Tun- nel—East.	2	28 21 21	0.30 5.40 2.75 0.47	+ 1.20 + 0.78	Dumont	1.75 8.61 16.57 3.80	2 stations Covington Stratford Hanksville	1.9 0.0 0.0
Virginia Washington West Virginia Wisconsin Wyoming	24.8	+ 2.3	2 stations. Kiona. 2 stations. Sheboygan. Eatons Ranch.	77 76 76 58 68	6 3 4† 2 9	Mountain Lake Snyders Ranch Marlinton Solon Springs Foxpark	- 2 - 6 -16	12 21 25† 12† 22	2. 95 5. 13 2. 88 1. 81 0. 77	- 0.28 - 0.40 + 0.30	Speers Ferry	5, 87 25, 28 5, 55 3, 20 3, 11	Lebanon Kennewick Burlington Oshkosh 4 stations	0.5 0.2 1.4 0.7 0.0

† Other dates also.

In the above table in the February, 1911, Monthly Weather Review, page 310, the mean temperature departure for Virginia should read + (plus), instead of - (minus) as printed-

Table I.—Climatological data for United States Weather Bureau stations, December, 1912.

	Elevinsti		on of ents.	P	ressure inches		Ter	mpera	ture Fa	of the	he a	ir, i	n de	egre	es	. 1	of the	ty, per	Preci	pitati ches.	on,		1	Wind.						tenths.	
Districts and stations.	above sea feet.	rabove	above	reduced to	reduced to	from nor-	mean 2.	from nor-			um.			1	daily	40 I	dew point.	relative humidity, cent.		from nor-	0.01, or	ement,	rection.		axi m relocit			y days.		iness,	
	Barometer abo	Thermometer above ground.	Anemometer ground.	Station, redu mean of 24 h	Sea level, redu mean of 24 h	Departure fromal.	Mean max. +	Departure from mal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	minim	Greatest range.	Mean wet the	Mean temper dew j	Mean relative	Total.	Departure from mal.	Days with 0 more.	Total mover miles.	Prevailing direction.	Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy	Cloudy days.	Average clou	Total snowfall
New England.							34.6	+ 5.5	-									74	4.56	+ 0.9										5.8	
Eastport. Greenville. Portland, Me Concord. Burlington. Northfield Boston. Nantucket.	288 404 876 125	11 12 115 14	1 117 79 1 48 2 60 5 188 4 90	28. 70 29. 84 29. 67 29. 52 28. 98 29. 85 29. 99	29.90 29.97 30.00 29.97 29.96 29.99 30.00	06 08 09 06 05	22.2 32.3 31.8 29.0 27.2 38.5 40.4	+ 5.2 + 5.4 + 6.5 + 6.7 + 6.9 + 3.7	47 58 61 59 61 69 57	6 6 6 6 2	36 31 39 40 36 36 45 46	1 5 9 8 5 0 15 20	9 9 9 9 9 9	32 34	31 36 27 35 27 33 27 25	24 34 37	22 20 28 34	78 68 80	2. 14 4. 16 3. 71 1. 15 1. 90 5. 36 6. 25	+2.0 $+2.6$	8 8 7 10 10 7 9	11,352 6,429 8,723 13,032	SW. nw. s. s. w.	47 28 50 32 39 58	se. s. w. s. sw. w. ne.	30 19 10 6 9 24	5 9 12 15	8 4 9 4	9 10 18 18 10 12	5.9 4.9 5.5 7.2 6.7 5.0 5.5	6.9 8.0 4.7 6.7 1.4 6.3 9.2 8.7
Block Island Narragansett Providence Hartford New Haven	160 159	141 122	165 2 140	29. 83 29. 83	30.01	05 05 06 05	37.4 36.5	+ 6.7	68	6	44 43 45	18 14 13 17	9 9	36 30 30 31	23 30 28 24	38 34 32 33	34 30 26 28	76 69	5. 61 4. 46	+ 1.8 + 1.7 + 0.9 + 2.4	8 7		SW.	36 41	sw. nw. nw.	28 30 28 8	12	9 7	10	6.0 5.2 6.3 5.4	5.5 7.0 7.0 12.5
Middle Atlantic States.							39.2	+ 4.2										74	3.47	+ 0.3										5.8	
Albany Binghamton New York Harrisburg Philadelphia Scranton Atlantic City ape May Baltimore Washington Lynchburg Mount Weather Norfolk Richmond W ytheville	871 365 374 117 805 52 18 123 112 681 1, 725 91	78 414 94 123 111 37 13 100 62 83 10 102 11	8 88 454 104 119 119 48 49 113 2 85 8 88 3 88 5 111 52	29, 70 29, 68 29, 95 29, 16 30, 02 30, 08 29, 96 29, 97 29, 34 28, 18 30, 02 29, 96	30, 02 30, 05 30, 08 30, 08 30, 09 30, 10 30, 10 30, 11 30, 07 30, 13	02	33. 6 38. 5 36. 6 40. 3 35. 5 41. 4 42. 4 40. 6 40. 0 41. 4 36. 2 47. 7 43. 2	+ 5.9 + 4.1 + 3.8 + 4.6 + 5.7 + 5.0 + 4.4 + 3.7 + 3.9 + 3.1 + 4.7	65 63 68 64 65 67 64 71 73 66 74 74	6 6 6 6 6 6 6 6 6 6 6 6 6	40 45 43 47 43 49 48 48 49 51 44 56 52	10 12 17 13 19 13 19 24 20 19 18 9 27 17	13 9 26 13 9 13 13 13 26 9 13	34 28 34 36 34 31 32 29 39 34	26 28 23 23 21 27 22 19 24 31 40 26 27 30 31	31 34 31 36 33 37 38 36 34 35 32 42 37 32	28 25 32 29 34 35 31 28 30 25 37	67 68 76 81 80 80 73 69 70 66 74 73	4. 24 3. 83 4. 74 4. 07 4. 23 3. 77 4. 17 4. 12 2. 36 3. 52 4. 65 2. 84	+ 1.1 $+ 1.0$ $- 0.9$ $+ 0.4$ $+ 1.2$ $- 0.2$	10 9 9 13 10 11 13 13 12 12 12 12 13	4,376 4,671 2,904 13,648 7,090	W. nw. sw. s. sw. sw. s. sw. nw. s. sw. s. sw. nw. s. sw. s. sw. nw. s. s. s.	27 72 30 36 35 38 40 29 37 24 74 58 42	s. nw. nw. nw. sw. s. s. w. nw. nw. nw. w. sw.	28 30 30	10 9 2 12 13 10 12 10 9 13	8 12 11 12 12 12 8 12 9 7 6 11 6	20 10 10 10 17 11 6 12 12 15 11 12	6.6 7.9 5.8 5.6 5.7 7.3 5.4 5.0 6.2 5.5 4.9 4.7 5.4	5.5 4.5 11.8 9.4 7.5 5.7 4.7 4.8 4.4 6.5 2.5 5.3 0.2 5.0
South Atlantic States.			1				50.4	+ 3.2		-		-						77	2.88	- 0.8										6.1	
Sheville. Charlotte. Hatteras danteo. Raleigh. Vilmington. Charleston. Columbia, S. C. Augusta. Augusta. Auksonville.	773 11 12 376 78 48 351 180 65	68 12 12 103 81 11 41 89 150	76 47 46 110 91 92 57 97 194	29. 29 30. 12 29. 72 30. 06 30. 10 29. 76 29. 96 30. 08	30. 14 30. 13 30. 14 30. 15 30. 15 30. 16 30. 16	01 .00 .00 .00	45.4 52.8 48.0 46.4 51.5 53.6 49.6 50.1 54.8	+ 2.5 + 4.0 + 3.7 + 4.3 + 2.3 + 2.4 + 3.1	73 75 77 73 75 76 77 76 77	6 6 6 6 6 6 6 7	49 53 60 59 55 61 61 58 62 68	33	13 10 10 13 13 28 28 28 28	31 37 45 37 38 42 46 41 42 48 51	33 28 27 30 34 21 30 28 24 29	34 40 49 46 49 43 45 50 55	35 42 45 38 42 48	70 78 80 71 80 84	1.34 3.13 4.22 3.58 2.64 3.90 2.09 3.83	- 1.0 + 0.4 - 0.5 + 0.8 - 0.6 + 1.0	13 13 7 15 11 11 11 13 12	5,380 5,106 6,510 4,362 3,856	sw. nw. sw. w. n. sw. w. ne.	29 52 38 35 31 33 32 39	nw. s. nw. nw. nw. nw. nw. nw.	27 30 27 30 24 19 30 27 9 24	10 9 17 12 9 4 12 9 5	7 14 8 5 9 8 5 7	14 8 6 14 13 19 14 15 19	5.9 6.1 5.4 5.5 5.8 7.2 5.6 6.4 7.4 5.9	
Florida Peninsula.							69.5	+ 4.7										84		- 0.3										4. 8	
Key West	25 23 35	37 39 79	72 72 96	30.08 30.03	30.11 30.06 30.12	02	72.6 73.3 65.5	+ 4.6	83 80 82	27 30 3	74	61 41	20	70 67 71 57 58	12 25 13 25 26	69 68 70 60	68 66 68 57	84	1.90 1.77 1.16	+ 0.4 - 0.3 - 0.9	7 6 6	5,965 6,224 12,070 4,770	se. ne.	25 39	nw. ne. s. nw.	1	18	15	8 6 8	4.4 - 5.7 . 3.8 - 5.1 . 5.2 .	
East Gulf States.							50.3			-			-					78		+ 2.1										6.8	
Atlanta Macon Macon Phomasville Pensacola Anniston Birmingham Mobile Montgomery Meridian Vicksburg New Orleans	370 273 56 741 700 57 223 375 247	78 8 140 9 11 98 100 84 62	8 87 57 183 57 48 106 112 93 74	29. 75 29. 84 30. 09 29. 37 29. 40 30. 08 29. 92 29. 75 29. 89	30. 15 30. 15 30. 15 30. 18 30. 18 30. 15 30. 18 30. 16 30. 18	+ .02 + .02	49. 8 55. 0 55. 2 45. 6 46. 0 53. 6 50. 4 47. 8 49. 0	+ 3.0 + 2.5 + 1.3 + 1.4 - 1.3 + 2.1 + 1.3 + 0.9 - 0.4	73 78 78 70 70 70 76 73 70	5 3 2 5 3 5 3 3 17	52 58 64 62 54 53 61 58 56 56 62	36 23 25 35 30 26	28 13 28 28 28 28 28 19	38 39 46 42 40 42	23 32 33 25 36 30 22 28 29 24 26	41 45 50 50 41 49 45 44 44 51	46 41 40 40	87 78 74 79 77 79 75	3. 91 4. 80 4. 19 5. 41 5. 80 8. 16 6. 33	+ 0.9 $+ 1.2$ $+ 3.6$ $+ 1.8$ $+ 3.2$ $+ 5.9$	11 13 14 15 14 19 15 17 16	4,143 4,809	nw. n. nw. n. n. nw. n. ne. se.	27 25 39 39 28 31 26 24 27	w. nw. sw. nw. e. s. n. w. sw. nw. se.	27 8 24 27 23 4 12 18 5 26 6	10 9 8	5 5 8 6 5 10 7 3 2	17 18 17 17 18 15 14 19 21	7.5.6.5.6.7.7.2.6.7.6.6.4.6.2.7.2.7.1.	T.
West Gulf States.							47.4	- 1.7										73	3.10	- 0.3										6. 2	
Shreveport. Sentonville Fort Smith ittle Rock Brownsville orpus Christi Fort Worth Balveston Houston Palestine an Antonio Faylor	1303 457 357 57 20 670 54 138 510 701	11 79 139 4 69 106 106 111 64 80	777 114 121 72 91	28. 71 29. 64 29. 76 30. 13 29. 40 30. 08 29. 98 29. 61 29. 40	30. 12 30. 13 30. 15 30. 15 30. 13 30. 14 30. 13 30. 15 30. 15	+ .04 01 .00 + .01 + .03 + .01 + .02 + .03 + .04 + .04	38. 0 41. 2 43. 3 57. 6 54. 7 45. 5 55. 4 53. 6 46. 8 49. 8	+ 0.5 - 0.5 - 0.2 - 1.9 - 2.0 - 0.9 - 0.9 - 2.6 - 3.3	64 68 68 80 77 74 75 78 70	5 5 4 3 1 1 5 5	54 48 52 52 66 61 54 61 54 58 54	14 21 23 34 36 27 38 35 28	9 28 24 27 12 24 27 24	28 31 34 49 49 37 50 46 40 42	27 41 36 31 34 25 36 23 25 25 34 31	35 38 51 38 52 43 44	48 29 49 40	65 83 59 84 	0. 29 0. 49 2. 22 1. 51 1. 53 1. 95 8. 61 10. 09 4. 77 2. 76	+ 0.2 + 0.7 + 4.9 + 1.1 + 1.2	2 4 9 15 13 7 13 13 12 12	8,821 5,770 5,747	s. e. sw. n. n. s. n. n. n. n. n. n.	36 46 25 31 30	s. nw. nw. n. sw. nw. ne.	1	16 13 12 3 11 10 8 8 7	9 6 6 7 1 7 6	6 12 13 21 19 14 17	6.5 - 3.9 5.0 5.5 7.7 - 6.2 6.2 - 6.8 - 6.4 - 7.1 - 6.7	0.3 2.1 T.

 $\textbf{Table I.--} Climatological\ data\ for\ United\ States\ Weather\ Bureau\ stations,\ December,\ 1912--- Continued.$

	Elevinstr			I	ressu		п	Ter	mpera			the s		n d	egre	es	Tr.	of the	y, per			pitatio ches.	n,		W	Vind.						tenths.		end of
Districts and stations.	bove sea	above	above	ced to	reduced to	ours.	m nor-	mean 2.	m nor-			um.				daily	wet thermometer.	temperature of	relative humidity, per	ent.		m nor-	0.01, 01	ement,	ection.		x i m elocit			days.			ii.	ground at month.
DISTITUTES diff. SEGURDAS.	Barometer abov level, feet.	Thermometer above ground.	Anemometer ground.	Station, reduced t mean of 24 hours.	Sea level, redu	mean of 24 n	Departure from nor- mal.	Mean max. + n min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	ninim	Greatest range.	Mean wet the	Mean tempe	Mean relative	30	Total.	ture fi	Days with o	Total movement, miles.	Prevailing direction	Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy	Cloudy days.	Average cloudiness,	Total snowfall.	Snow on gro
Ohio Valley and Ten- nessee.								37. 5	+ 0.8	3										72	3. 29	- 0.1										5. 8		
Chattanooga Knoxville Memphis Nashville Lexington Louisville Evansville Indianapolis Cincinnati Columbus Dayton Pittsburgh Parkersburg Elkins	996 399 546 989 525 431 822 628 824 899 842	90 76 100 77 111 77 15 115 15 18 15 18 17 18 2 35 7	3 100 3 97 8 191 5 102 1 132 2 82 4 164 1 164 2 160 3 222 1 216 3 410	29. 0 29. 7 29. 8 29. 0 29. 8 29. 0 29. 1 29. 4 29. 1 29. 0 29. 1	8 30 5 30 8 30 4 30 5 30 5 30 7 30 2 30 8 30 9 30 4 30	. 16 . 19 . 18 . 14 . 14 . 13 . 08 . 12 . 08 . 07 . 08	+ .00 + .04 + .03 .00 .00 04 01 04	39. 7 43. 1 40. 4 35. 8 38. 5 37. 9 34. 6 37. 2 34. 4 35. 8	+ 0. - 0. - 0. - 0. + 0. + 1. + 2. + 1. + 1. + 1. + 1. 2 + 1.	70 70 66 64 64 65 65 65 65 65 65 65 65 65 65 65 65 65		5 50 48 5 50 5 48 5 46 5 46 5 46 5 42 5 42 6 43 6 43 6 46 6 43 6 46 6 6 6	18 22 16 13 14 18 18 18 18 18 18 18 18 18 18 18 18 18	8 13 9 9 6 13 1 12 1 12 5 12 8 12 8 12 8 12 1 12 1 12 1 12 1 12 1	32 36 36 32 28 31 230 227 229	30 26 31 30 30 30 32 31 32 31 28 32	33 33 33 33 33 33 33	8 3 6 3 6 3 2 3 3 2 3 2 1 2 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	31 31 31 27 27 24 29 26 26 26 29	72 75 66 72 68 69 69 74 73 73 68 78 80	6. 42 3. 00 5. 14 3. 66 2. 52 1. 69 1. 43 2. 25 2. 34 1. 96 2. 86 2. 62 2. 87	$\begin{array}{c} +\ 1.3 \\ +\ 0.3 \\ -\ 1.2 \\ -\ 2.1 \\ -\ 1.6 \\ -\ 0.7 \\ -\ 0.4 \\ -\ 0.7 \\ +\ 0.1 \\ -\ 0.2 \\ -\ 0.6 \end{array}$	13 11 13 12 8 9 9 9 11 10 14 13	6, 292 6, 480 8, 805 6, 494 6, 313	ne. s. se. s. sw. s. sw. sw. sw. sw. sw.	46 46 35	W. NW. NW. SO. SW. S. SW. W. NW.	3 2 2 3 3	0 1 1 1 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1	9 2 1 1 2 0 1 5 1 1 1 9 6 1	8 14 4 13 6 14 3 16 0 11 9 7 10 10 10 11 8 14 8 14 3 15	5. 5. 6 5. 6 5. 6 5. 6 6. 1 6. 1 6. 1 6. 1 6. 1 6. 1	0. T. 3. 6. 2. 3. 1. 1. 3. 5. 3. 10.	8 5 1 2 1 3 0 7 3 7 7 7
Lower Lake Region.	765	17	900	90 1	9 90	06	- 10		+ 3.			5 40	1	4 15	2 28	24	3	2 :	29	76 80		- 1.0 - 1.2	12	16,887	sw.	72	sw.		2	3 1	0 1	7.1		2
Buffalo Canton Dswego Rochester Syracuse Erie Cleveland Sandusky Toledo Fort Wayne Detroit	448 338 523 597 714 762 628 628	8 1 5 7 7 9 4 9 9 6 9 6 11	0 71 6 91 6 100 7 113 2 100 0 201 2 70 8 240 3 124	29. 29. 29. 3 29. 2 29. 2 29. 2 29. 5 29. 4 29.	16 29 39 29 10 29 13 29 21 29 18 30 32 30 31 30	1, 96 1, 96 1, 99 1, 99 1, 99 1, 02 1, 02 1, 01 1, 03	10 10 07 09 08 07 05	26. 33. 33. 34. 33. 33. 33.	0 + 4. 1 + 4. 2 + 4. 5 + 2. 6 + 2. 6 + 2. 1 + 2. 1 + 2. 1 + 2. 1 + 2. 2 + 3.	2 59 2 61 0 61 9 64 8 60 7 60 5 61 6 51	9 . 6	6 38 6 40 6 40 6 40 6 40 5 40 5 40 5 40 5 40 6 38		3 9 4 9 2 9 1 9 1 11 10 11 10 11 15 11	9 18 9 27 9 28 9 26 2 29 2 27 2 26 2 26	33 26 27 29 20 31 30 20 32 31	3	0 0 0 0 0 11 10 10 10	27 25 25 27 26 26 25 26 26 26 26	79 71 74 74 73 74 73 78 79	2. 55 2. 37 1. 75 1. 90 2. 59 1. 33 1. 52 1. 57	- 1.0 - 1.2 - 1.1 - 0.8 - 0.5 - 1.2 - 0.8 - 0.7 - 1.1	16 18 11 15 13 11 10 13 12	9, 449 10, 193 7, 926 11, 225 11, 288 13, 417 7, 388 14, 046 9, 931 11, 748	SW. S. SW. SW. SW. SW. SW.	62 42 44 56 36 46 33 56 44	SW. NW. W. S. W. NW. NW. SW. SW. SW.	. 1	6 19 6 2 12 8 8 8	6 2 3 6 2 6 4 7 6 1	8 1 9 2 9 1 9 1 9 2 6 1 7 2 9 1 10 1	7 6. 0 8. 9 7. 6 7. 0 7. 9 6. 0 7. 5 6.	5 12 0 13 6 6 0 7 7 10 9 3 6 4 3 2 4 0	7 T. 0 9 T. 9 T. 9 3 3 8 2
Upper Lake Region.									0 + 3.											79		- 0.5										7.		
Alpena Secanaba Frand Haven Frand Haven Frand Rapids Lansing Houghton Marquette Port Huron Sault Ste. Marie Thieago Milwaukee Freen Bay Duluth North Dakota,	613 633 673 684 685 686 686 6168 6168 6168	2 4 2 5 5 7 3 1 4 6 4 7 8 7 4 1 3 14 1 11 7 4	8 8 8 4 90 8 1 6 6 7 7 11 8 12 1 6 6 31 9 13 8 9 8	2 29. 2 29. 7 29. 2 28. 2 29. 1 29. 1 29. 0 29. 1 29. 6 29.	18 29 29 29 16 29 98 29 04 29 04 29 14 29 117 29 20 29	0. 87 0. 93 0. 95 0. 95 0. 83 0. 86 0. 95 0. 99 0. 93 0. 89	16 12 10 19 14 11 14 09 13 15	25. 33. 32. 31. 22. 24. 30. 24. 33. 30. 27.	8 + 5. 6 + 3. 6 + 3. 8 + 4. 0 + 4. 6 + 1. 8 + 1. 8 + 2. 2 + 3. 4 + 4. 8 + 6. 9 + 0. 8 + 8.	4 4 5 5 5 0 2 5 7 4 4 9 5 5 7 4 1 5 5 5 1 2 4	4 5 6 7 3 2 5 8 7 4 2	1 38 6 38 5 32 1 28 1 3 6 3 6 3 5 48 1 3 5 3	2 - 0 1 0 1 8 1 1 - 7 1 1 -	1 1 0 1 9 1 1 2 2 1 0 1 6 1 3 1 2 1 3 1	2 18 2 28 2 27 2 24 2 16 2 18 2 24 2 17 2 26 2 24 2 24 2 26	28 24 25 26 26 26 26 26 26 26 26 26 26 26 26 26	9 2 4 3 8 3 7 2 9	23 10 10 28 23 23 23 26 27 24	24 20 28 27 25 21 24 23 21 14	80 79 79 81 81 81 78 80 86 68 74 79 87	1. 80 1. 70 1. 30 1. 20 2. 40 1. 20 1. 80 1. 30	1.2 0 + 0.1 1	16 16 16 18 17 25 16 16 17 18 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	3 9,275 6 7,265 6 12,888 6 6,965 6 6,965 7 10,225 7 7,65 9 9,06 9 9,06 9 9,06 9 9,06 9 9,06 9 9,06 9 9,06 9 9,06	8 W. 8 SW. 1 SW. 1 SW. 8 SW. 8 SW. 8 SW. 8 SW.	4 22 23 3 3 3 4 4 4 4	e. 5 sw. 8 w. 8 w. 4 nw 9 sw.		17 6 6 6 10 3 6 6	6 4 3 7 3 2 5 0	7 1 7 2 7 7 1 3 2 1 1 1 1 7 1 3 2 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7	8 7. 9 7. 8 9. 3 5. 2 5.	0 73 3 6 2 9 2 6 21 8 17 4 4 2 11 5 T 7 4 1 20	. 4 0. .1 1. .8 .3 .1 15. .9 6. .7 T 2. .9 T 2. .9 T 8.
Moorhead	. 94	0		7 28.	88 2	9. 94	14	17.	6 + 6.	9 4			9 -1						14	87	0.9	5 + 0.2		8 6,97			5 nw		30		3 1		5 9	0.2 6
Bismarck Devils Lake Williston Upper Mississippi	. 1,48	2 1	4 5 1 4 10 4	4 28.	25 25	9.89	17	16. 23.	0 + 7. $2 + 8.$ $5 + 9.$ $8 + 4.$	9 5	6	9 2	4 - 6 -1 5 -1	4 1		6 4	7	15	15 13 16	76 86 77 73	0.7	0 - 0.2 $4 + 0.4$ $8 - 0.4$ $1 - 0.8$		6 8,45 8 8,79 5 6,53	9 nw 8 nw 0 sw.		4 nw 3 nw 8 nw		30	12 12 5	7 1	2 5.	9 (.6
Valley. Minneapolis. St. Paul. La Crosse. Madison. Charles City Davenport. Des Moines. Dubuque Keokuk. Cairo. La Salle. Peoria. Springfield, Ill. Hannibal. St. Louis.	94 71 97 1,01 60 86 69 61 35 53 60 64	4 5 5 6 6 1 1 18 14 16 16 16 16 16 16 16 16 16 16 16 16 16	03 21 11 4 70 7 10 4 10 4 71 7 71 7 84 9 81 9 81 9 87 9 87 9 87 9	2 28. 8 29. 8 28. 9 28. 9 29. 7 29. 6 29. 8 29. 8 29. 14 29. 15 29. 10 29.	15 2 86 2 85 2 32 3 06 2 21 2 35 3 74 3 35 3 35 3 47 3	9, 95 9, 96 9, 96 0, 00 9, 99 9, 98 0, 05 0, 14 0, 03 0, 04 0, 06	13 12 14 12 12 00	3 27. 2 27. 4 25. 0 32. 2 31. 30. 7 34. 1 39. 6 32. 7 32. 6 34. 6 35. 5 38.	2 + 3. 4 + 4. 8 + 5. 3 + 6. 4 + 5. 7 + 6. 2 + 5. 5 + 5. 4 + 0. 4 + 4. 6 + 4. 6 + 3. 5 + 4.	9 4 6 1 3 2 2 8 6 7 1 6 6 9 8 6 7 1 6 6 9 8 6 7 1 6 6 9 8 6 7 1 6 9 8 7 1 6 9 7 1 6 9 8 7 1 6 9 7 1 6 9 7 1 6 9 7 1 6 9 7 1 6 9	19 54 52 59 58 55 64 64 67 57 58 60 63	1 3 1 3 5 3 28 3 5 4 5 4 5 4 5 4	2 - 6 - 5 - 1 2 9 4 4 7 0 2 2 3 i 5	0 1 2 1 1 1 4 1 4 1 1 1 6 1 7 3 1 8 1 8 1	22 1- 22 1- 12 1: 12 2: 12 2: 13 2: 14 2: 15 2: 16 2: 17 3: 18 4: 18 4:	4 39 30 30 6 33 32 32 34 4 33 6 36 3	2 22 16 15 15 10 17 11 13 11	25 23 28 26	16 21 23 20 23 25 30 24 24 24		1.5 2.1 1.3 0.9 0.5 0.3 1.0 0.5 1.5 0.9 1.1 0.3 0.4	$ \begin{vmatrix} 3 - 1 & 1 \\ 1 - 2 & 1 \\ 6 - 1 & 1 \\ 2 - 1 \end{vmatrix} $	1	6 6, 88 3 6, 44 7 5, 46 2 7, 60 7 6, 64 8 7, 84 6 7, 28 5 7, 94 4 8, 73	7 nw 3 s. 4 sw. 0 nw 7 sw. 9 sw. 3 s. 0 sw. 7 s. 4 w.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00 nw 66 n. 12 nw 18 sw 14 nw 19 w. 12 sw 18 sw 18 sw 13 sw 13 sw 13 sw 19 w.	7.	1 2 5 20 5 30 5 5 2 5 5 2 1	9 15 15 13 20	7 10 12 13 9 9 7 5 5 9 9	13 5. 12 6. 10 5. 9 5. 7 3. 7 3. 11 5. 6 3. 11 4. 12 5. 9 4. 7 3. 9 4. 7 3. 9 4. 7 3. 9 4. 7 3. 9 4. 9 5. 9 4. 9 5. 9 4. 9 5. 9 6. 9 7. 9 7. 9 8. 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3.6 2 3.8 3 1.2 3 1.1 3 3.6 3 3.2 3 7 3 3 3 7 3 3 3 7 3 3 3 7 3 3 3 3
Missouri Valley.	71	84	11 6	4 00	22 2	0.00	- 0	1	2 + 5 8 + 2		64	1 4	16	0	12 2	6 3	39			65		3 - 0.	1	4 7,45	9 8		35 W.		2	18	7	6 3		r
Columbia, Mo. Kansas City. St. Joseph. Springfield, Mo. Iola. Topeka. Lincoln. Omaha. Valentine. Sioux City. Pierre. Huron. Yankton.	96 98 1, 18 1, 16 2, 56 1, 11 1, 57 1, 36	53 1 57 24 54 53 89 05 1 98 35 72 06	61 18 111 4 98 16 111 8 85 16 111 8 115 13 47 19 70	31 29 39 28 34 28 30 29 31 34 28 34 28 34 27 34 28 34 27 34 28 35 27 36 29	01 3 98 3 67 3 03 3 72 3 80 3 24 3 74 3	80. 07 80. 05 80. 11 80. 12 80. 03 80. 04 80. 04	0 0 0 0 0 1	5 36 . 34 2 36 0 35 . 36 9 33 9 32 6 28 2 29 7 29	$ \begin{array}{c} 6 + 2 \\ 7 + 5 \\ 6 - 3 \\ 6 + 1 \\ 6 + 3 \\ 2 + 5 \\ 1 + 6 \\ 8 + 5 \\ 0 + 3 \\ 2 + 6 \\ 0 + 3 \\ 2 + 6 \\ 0 + 6 \\ \end{array} $.2 .1 .1 .1 .2 .7 .5 .6 .4	59 58 63 58 60 61 56 56 56 56	5 28 5 1 28 30 1 14 1 27	16 14 16 16 15 12 10 39	12 8 14 13 12 6 7 2	12 2 12 2 9 2 9 2 12 2 12 2 8 2 6 1 8 1	8 35 37 45 36 36 36 36 46 46 48 41 41 41 41 41 41 41 41 41 41 41 41 41	38 39 41 35	31	23 22 24 20 21 16 20 15 16	64 64 62 71 57	0 0.65 0.85 0.85 0.85 0.85 0.86 0.86 0.86 0.86 0.86 0.86 0.86 0.86	57 - 0. 52 - 0. 51 - 0. 52 - 0. 52 - 0. 52 - 0. 52 - 0. 53 - 0. 54 - 0. 55 - 0. 51 - 0. 54 - 0. 55 - 0. 54 - 0.	7 4 4 6 6 6 6 4 2 2	3 10, 43 2 7, 22 2 8, 13 3 5, 77 2 8, 41 2 8, 7, 1 5 7, 1 6 8, 5 2 9, 90 1 8, 2	36 sw 24 nw 20 s. 71 s. 10 sw 18 nw 16 nw 73 w. 62 nw 11 nw	v. v	41 nv 37 nv 32 se. 28 w. 38 s. 42 nv 40 nv 42 nv 43 nv 43 nv 31 n.	N. V.	1 5 16 5 1 1 1 30 1 30	17 20 18 19 18 17 16 13 18 10 11	9	7 3 5 3 9 4 4 3	.8 .0 .2 .1 .5 .6 .9 .6 .8	r. r. r. 0.1 0.4 2.4 3.5 0.2 2.0 5.2

Table 1.—Climatological data for United States Weather Bureau stations, December, 1912—Continued.

	Elevinstr		on of ents.		ressure		Ter	mpera			the a		n de	egre	es			ity, per		ipitat iches.			1	Wind.					tenths		end of
Districts and stations.	above sea feet.	rabove	above I.	reduced to	reduced to 24 hours.	om nor-	+ mean 2.	from nor-			num.				danny.	wet thermometer.		e humidity,		from nor-	0.01, or	rement,	rection.		aximu elocit			y days.	diness		nd at
	Barometeral level, fe	Thermometer al	Anemometer :	Station, redu mean of 24	Sea level, red mean of 24	Departure from normal.	Mean max. +	Departure from mal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest range.	Mean wet th	Mean temp dew	Mean relative	Total.	Departure frame.	Days with (Total move miles.	Prevailing direction.	Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy	Average cloudiness	Total snowfall	Snow on gre
Northern slope.							27.0	+ 3.3										68	0.46	- 0.4	1								5.	. 7	
Havre Miles City Helena Kalispell Rapid City heyenne ander sheridan Vellowstone Park North Platte	4, 221 2, 962 3, 234 6, 088 5, 372 3, 790 6, 200	11 46 56 66 8	48 114 34 50 64 68 47 48	27. 41 25. 77 26. 94 26. 54 23. 94 24. 63 26. 06 23. 85	30.00 30.10 30.10 30.13 30.13 30.13 30.00 30.23	516 406 706 0 + .03 504 2 + .03 9 + .04 2 + .06 1 + .01	31.9 30.4 27.2 30.8 25.3 20.8 28.6 18.4	+10.9 + 5.6 + 3.3 + 4.8 - 3.7 + 1.6	54 48 48 62 51 54 56 238	27 3 9 14 29 9	40 38 34 42 36 34 41 26	6 - 5 - 4 - 8	21 22 25 22 22 21	23 23 20 20 20 15 7	37 33 26 23 38 32 46 38 25 38	24 16	23 19 21 15 13 7 18 12	68 76	0.11 0.08 0.37 0.69 0.21 0.63 0.40 0.21 1.47 0.18	- 0.8 - 0.4 - 1.2 - 0.2 + 0.3 - 0.3	1 10 1 10 2 10 2 5 3 6 4 8 1 18	9, 121 5, 465 7, 631 3, 480 6, 425 10, 473 3, 860 6, 135 6, 932 6, 115	W. SW. W. NW. SW. NW.	33 50 32 40 60 48 56 37	W. W. SW. SW. NW. SW. SW. W. SW.	18 30 31 18 30 30 30 30 30 30 5	12 4 2 12 13 15 7 5	16 14 1 8 2 10 12 10 9 1 12 1	3 6. 1 7. 9 5. 6 4. 6 4. 5 6.	0 1. 8 3. 9 4. 1 2. 3 7.	3 . 2 . 8 . 4 . 8 . 2 . 9 1 .
Middle slope.								+ 1.6										61	0.34	- 0.4	L								3.	. 0	
Penver Pueblo oncordia Oodge City Vichita Oklahoma	4,685 1,398 2,509 1,364	80 42 11 139	50 50 51 51 51 58	25.28 28.55 27.43 28.61	30. 10 30. 0 30. 1 30. 0	0 + .02 $7 + .04$ $2 + .02$ 902	31.2 35.6 34.6 36.2	$\begin{array}{c} -0.8 \\ +6.1 \\ +3.6 \\ +2.0 \end{array}$	60 66 59	14 14 14 1	47 48 49 46	10 13 19	21 12 23 6	18 15 23 20 26 28	36 45 41 43 31 33	24 29 26 30	13 24 18 23	54 50 70 60 64 66	0. 45 0. 02 0. 12 T. 0. 85 0. 62	- 0.4 - 0.4 - 0.6 + 0.1	1 1 1 0 0 2	6, 972 5, 956 5, 668 7, 559 9, 957 10, 471	nw. sw. nw.	48 28 39 39	w. w. w. nw. nw.	30 19 5 5	19	8 10 8 4	0 2. 8 3.		3 .
Southern slope.								- 4.(68	1.34											. 8	
bilene marillo el Rio oswell	3.676	10	49	26.30	30.1	5 + .05 4 + .05 4 + .04 8 + .11	33.6 47.5	- 2.8 - 4.9	66	14	57	9	24	34 22 38 20	36 40 41 46	28		63 73 69	1.31 1.18 1.76 1.10	+ 0.4	1 12	7,525 8,316 4,653 4,279	sw. nw.	37	w. sw. nw. nw.	16 4 23 17	22 8	6 1	2 3.	9 0. 4 11. 4 5 11.	4
Southern plateau.								- 4.0										57	0.46	- 0.2	2									.4	
l Paso	7,013 6,907 1,108	8 8 50	56 57 56	23.23	30.19	9+. 13	25.9 24.6 48.9	- 4.4 - 3.8 - 3.0	53 50 70	15 30 1	36 62	5 0 29	6 11 25 29	30 16 13 36 39 22	31 29 39 34 39 45	20 40 41	13 29 27	59 63 51 44 68	0.48 0.79 0.56 0.83 0.22 0.00	+ 0.5	5 2 2 1	8, 130 5, 235 2, 720 5, 623 5, 996	w. n.	31 . 37 18 . 34	ne. sw. nw. e. n. s.	4 22 7 22	17 21 20 22 28 24	7 4 6 2	3 2. 7	2 3. 9 9. 6. 5	8 2
Middle Plateau.							1	- 3.1										66	0 25		1									. 8	-
eno onopah. Vinnemucca linnemucca alt Lake City ourango rand Junction	6,090 4,344 5,479 4,360 6,546	12 18 10 147 18	20 56 43 189 56	24. 15 25. 76 24. 70 25. 74 23. 67	30. 20 30. 25 30. 25 30. 24 30. 2	H+ . 14	30.0 30.0 26.8 30.7 23.3	- 0.7 - 4.9 - 1.4 - 5.0	53 57 53 51 45	31 13 13 14 8	43 41 38 37	10 4 1 12 2	27 22 7	23 17 13 24	45 23 41 40 20 37 29	17	20 18 20 11	59 47 71 76 66 67 76	0.09 T. 0.27 T. 0.80 0.44 0.17	- 0.8 - 0.7 - 0.6 - 0.5 - 1.6	8 0 8 0 7 6		w. sw. w. se. nw.	40 45 37 46 26	w. nw. sw. sw. nw. nw.	31 15 4 16	25 13 15	9 5 1 6 4 1	4 3. 4 5. 0 2. 4 5.	0 T.	0
Northern Plateau.							31.2	- 0.1										76	0.85	- 0.8	3									. 7	-
aker. oise. ewiston. ocatello. pokane. 'alla Walla.	2,739 757 4,477 1,929	78 40 46 101	86 48 54 110	27.34 29.36 25.58 28.04	30. 25 30. 15 30. 25 30. 15	6 + .10 9 + .06 9 + .06 5 + .06 5 + .07	31.6 37.6 27.4 32.2	-0.6 $+0.1$ -1.0 $+1.4$	53 61 51 49	13	45	21	26 9	24 31	30	28	24	78		- 0.5 - 1.1 - 0.7	13 8 7	5,030 3,503 3,508 7,044 6,038	se. ne. se.	38 35 42	SW. W. S. SW. W.	31 3 29 30 3	6 3	9 1 10 1 14 1	5 6. 5 6. 4 6.	.8 1.	5 0 0
North Pacific Coast Region.							41. 8	+ 0.2										89	7.05	- 0.8)								8.	. 1	
orth Head	211 259 205 213 109 153 510	8 215 113 7 68	53 250 120 57 106	29. 82 30. 01 29. 92 29. 95 30. 04	30. 11 30. 14 30. 15 30. 05 30. 20	4 + .11 1 + .13 4 + .13 5 + .14 5 + .09 9 + .13 5 + .15	39.5 41.6 40.6 43.6 41.4	+ 1.2 $+ 0.4$ $+ 0.3$ $- 0.3$ $+ 0.1$	50 51 53 51 54	2 17 17 17 29	45 46 45 47 46	30 32 29 34 30	5 8 7 27 27	37		40 39 43 40	38 38 42 37		7. 18 6. 62 4. 43 6. 77 12. 15 8. 01 4. 16	- 0.3 - 1.6 - 0.6 - 2.4 + 0.7	21 17 19 1 25 21	15, 075 3, 910 9, 202 5, 532 16, 219 5, 537 2, 328	s. se. sw. e. sw.	28 64 34 88 31	S. SW. SW. S. SW.	30 27 17 31 17 31 31	1 1 1 2 2	6 2 7 2 9 2 9 2 3 2	24 8. 23 8. 21 8. 20 7. 26 8.	.0 6 0. 4 T. .1 3. .8 T. .5 T.	0
Middle Pacific Coast							47. 8	- 0.6	-									75	1.82	- 2.5	5								4	. 5	
Region. ureka. ount Tamalpais. oint Reyes Light. ed Bluff. acramento. an Francisco. an Jose. outheast Farallon.	490 332 69	200 12	18 18 56 117 204 110	27. 72 29. 67 29. 89 30. 17 30. 07 30. 08	30. 24 30. 19 30. 26 30. 24 30. 24	3 + .12 3 + .12 4 + .12	44. 2 50. 2 47. 0 46. 9 51. 6 47. 8	$ \begin{array}{r} -3.4 \\ -0.4 \\ +0.6 \\ +0.6 \\ +0.7 \end{array} $	59 60 71 61 67 69	8 21 7 7 8 13	55 56 57 60	33 42 29 31 41 26		40 47 39 38 46 36	27 25 22 37	40 41 44 46	36 34 39		5. 83 3. 16 1. 03 0. 88 0. 23 1. 30 0. 43 0. 88	- 0.3 - 3.6 - 3.3 - 2.9 - 2.6	10 9 5 5 3 3 6 5 5	4,766 16,025 14,797 4,906 5,741 4,107 4,486 10,644	nw. nw. nw. se. ne. nw.	66 75 30 31 34 36	sw. nw. nw. nw. ne. n. nw.	3 19 21 21 21	14 21 16 19	7 11 7 5 6	8 4 9 5 0 4 5 3 9 4 6 3	.5 .0 .5 .0 .1 .4	
South Pacific Coast Region.							51.8	- 1.1										58	0. 16	- 2.0)								2	.4	
restio	330 338 87 201	159 94	191 102	29.76 30.02	30. 13	+ .12 + .06 + .05 + .11	56. 6 54. 1	+0.1 -1.6	82 78	18 18	67 63	38	25 31	34 46 45 39	32 29 28 38	45 47	32 39	64 46 63 57	0.35 0.03 0.03 0.24	-2.9 -1.8	2 1	2,398 4,862 3,984 4,766	ne.	38 26	w. ne. ne. ne.	5 21	22 23 26 22	6	2 2	.8 .1 .5	
West Indies.																												0.			
n Juan	82	48	90	29.91	30.00	+ .03	77.2	*****	85	27	82	70	10	72	14	****	****	***	4. 19	- 2.0	30	7,384	e.	32	e.	22	7	21	3 4.	.8	-
Panama. ncon alebra blon	92 404 10	6 5 5	62	29.41	29.83		78.8		88	1	90 86 84	69 67 73	18		21 19 12	73.	72	89 91 84	3.27 4.87 11.47	- 2.8	15	5,007 5,567 8,992	nw.	24	nw. n. ne.	16 9 13	6	20	5 5	.8 2	

Table II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during December, 1912, at all stations furnished with self-registering gages.

		Total du	ration.	ion.	Excessi	ve rate.	before e rate		Deptl	ns of p	recipit	ation (in inc	hes)	during	g peri	ods of	time in	ndica	ted.	
Stations.	Date.	From-	То—	Total amount precipitation.	Began—	Ended—	Amount be excessive began.	5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	
bilene, Tex	1			0. 23														. 20			
pena, Mich	6 2		**********	0. 26														.14			
narillo, Tex	22-23			0.70														*			
niston, Ala	4 5			1.14 0.31														.35			
heville, N. Clanta, Ga	4			0.68						*****								. 32			
lantic City, N. J	30 23			0.76														.38			
igusta, Ga iker, Oreg	29-30			0.41														*			
ltimore, Md	19			0. 51 0. 26														.16			
ntonville, Arknghamton, N. Y	18-19			0.61														*			
rmingham, Alasmarck, N. Dak	16-17			1.93														.67			
ock Island, R. I	30			1.54														.48			
ise, Idaho	13 19			0.25														.31			
ston, Mass	30			0.66														*			
rlington. Vt	18-19			0.70																	
iro, Illnton, N. Y	18-19			0.27														*			
arles City, Iowa	. 1			0.68														* .53			
arles City, Iowaarleston, S. Carlotte, N. C	26			0.63																	
attanooga, Tenneyenne, Wyoicago, Ill				2.45														78			
eyenne, Wyo	25 16-17			0. 22 0. 45																	
cinnati, Ohio	. 0			0.56														23			
cinnati, Ohioveland, Ohioumbia, Mo	5			0.35																	
umbia, S. C	23			1.47														25			
umbus, Ohio	27			0.66																	
umbia, S. C. umbus, Ohio neord, N. H. neordia, Kans.	1 1			0.12														07	****		
				0.35																	
venport, Iowa yton, Ohio	29-30			0.34 0.58																	
Rio, Tex.	10			0.35														. 13			
wer, Colo	4-5			$0.31 \\ 0.22$														0.00			
roit, Mich				0.31														16			
troit, Michvils Lake, N. Dakdge City, Kans	14-15			0. 24 T.																	
buque, Iowa	10, 16			0.61									1			-		4.4			
luth, Minn	16-17			1.25								-				-		- Jo			
rango, Colostport, Me	4-5			0.23									1								
kins, W. Va	. 30			0.73														0.0			
Paso, Tex				$0.07 \\ 0.27$											*****			2.4			
anaba, Mich	1			0.75														. *			
reka, Cal	. 14			0.75 0.44														4.0			
ansville, Indgstaff, Ariz				0. 22														*			
rt Smith, Ark	. 22-23	*		0.32							-			1000				2.0			
rt Wayne, Ind	. 1-2			0.44									1000	1000				. 10			
esno, Cal	. 15			0.35																	
veston, Tex		3.10 p.m.	D. N. a. m. D. N. a. m.	1.46	4.35 p. m. 11.21 p. m.								72	2 .7	5						*
Do	. 21-22	D. N. a. m.	6.10 a.m.	1.80	7.23 a. m.	8.06 a. m	07	. 25	.31	.31	.32	. 34	. 43	3 .5	3 .6	3 .8	0				
Do and Haven, Mich	22-23	8.05 a. m.	6.15 a.m.	1.83 0.82	1.45 a. m.	2.48 a. m							.31	. 3	5 .3	7 .3	9 .4	*	5 .9	1	
and Junction, Colo				0.17																	
and Rapids, Mich	1-2			0.48										a land							
en Bay, Wis	16			0.73 0.24											** ***			1	9		
rrisburg, Partford, Conn	. 19			0.67																	
tteras, N. C	30		1.50 p. m.	1.11	12.37 p. m.	12.45 p. m		1.15													
tteras, N. Cvre, Mont	. 4			0.04														*			
ena, Montughton, Mich	. 4			0.14														4.8			
uston, Tex	. 2	D. N. a. m.	5.40 a.m.	1.36	2.23 a.m.	. 2.47 a. m	1. .01	.33	3 .60	.70	8.	0 .8	7								
Do				2.03 1.63	11.42 a. m 4.14 a. m	. 11.55 a. m 5.08 a. m		1 .32		3 .8	7	4 3			1 .5		56 .7	1 .8	0		
ron, S. Dak	. 5			0.10			** ****											*			
lependence, Cal lianapolis, Ind	- (‡)			0.32															9		
a, Kans	. 1			0.41														1	4		
a, Kansksonville, Fla	1-2	11.10 p. m.	10.45 a. m.	1.03	5.56 a. m	. 6.11 a. n	135	8 .1:	2 .3	.4	1		** ***	** ***							
dispel, Mont	. 3			0.26									** ***					1	9		***
olenie Lonzo				0.27	1.00	1.57 p. n	** ****								***			*			
oxville, Tenn	. 18	12.25 p. m.	2,20 p. m.	1.06	1.33 p. m	1.57 p. n	.0.	. 1	9 .5	.7	9	1.0					***	4			
Crosse, Wis	1-2	2		1.01							** ****							*			
nder, Wyo	1-2			0.18														*	1000		
ey West, Fla noxville, Tenn Crosse, Wis nnder, Wyo nnsing, Mich Salle, Ill	16-17			0.48								** ****			*** ***			(*)		
		3		0.17														(
																		(*			
ncoln, Nebr	1												1	-				1 70	n 1		
exington, Kyincoln, Nebrittle Rock, Ark	22-2	3									** ***	** ***	** ***	*** ***			*** ***		10		
ittle Rock, Ark s Angeles, Cal ouisville, Ky udington, Mich ynchburg, Va.	1/	5		0.02									** ***				*** ***	(12		

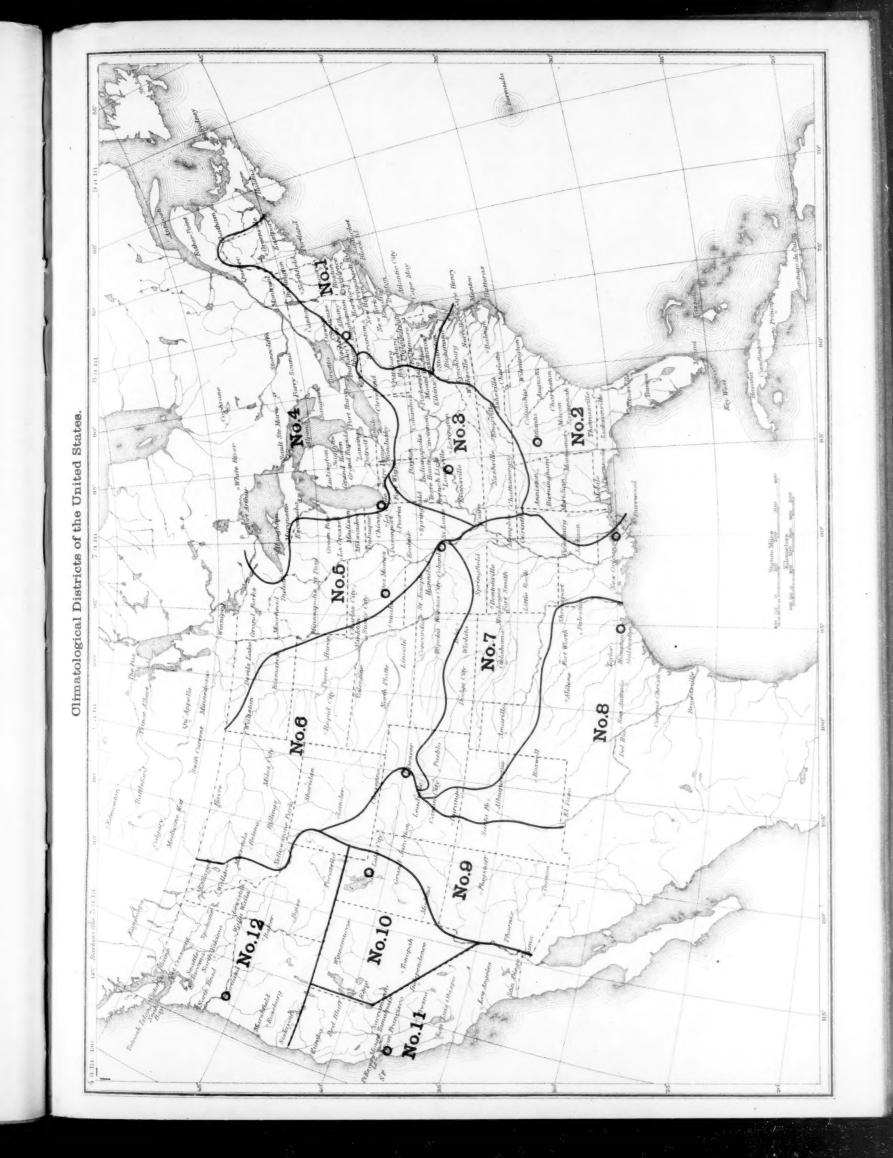
Table II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during December, 1912, at all stations furnished with self-registering gages—Continued.

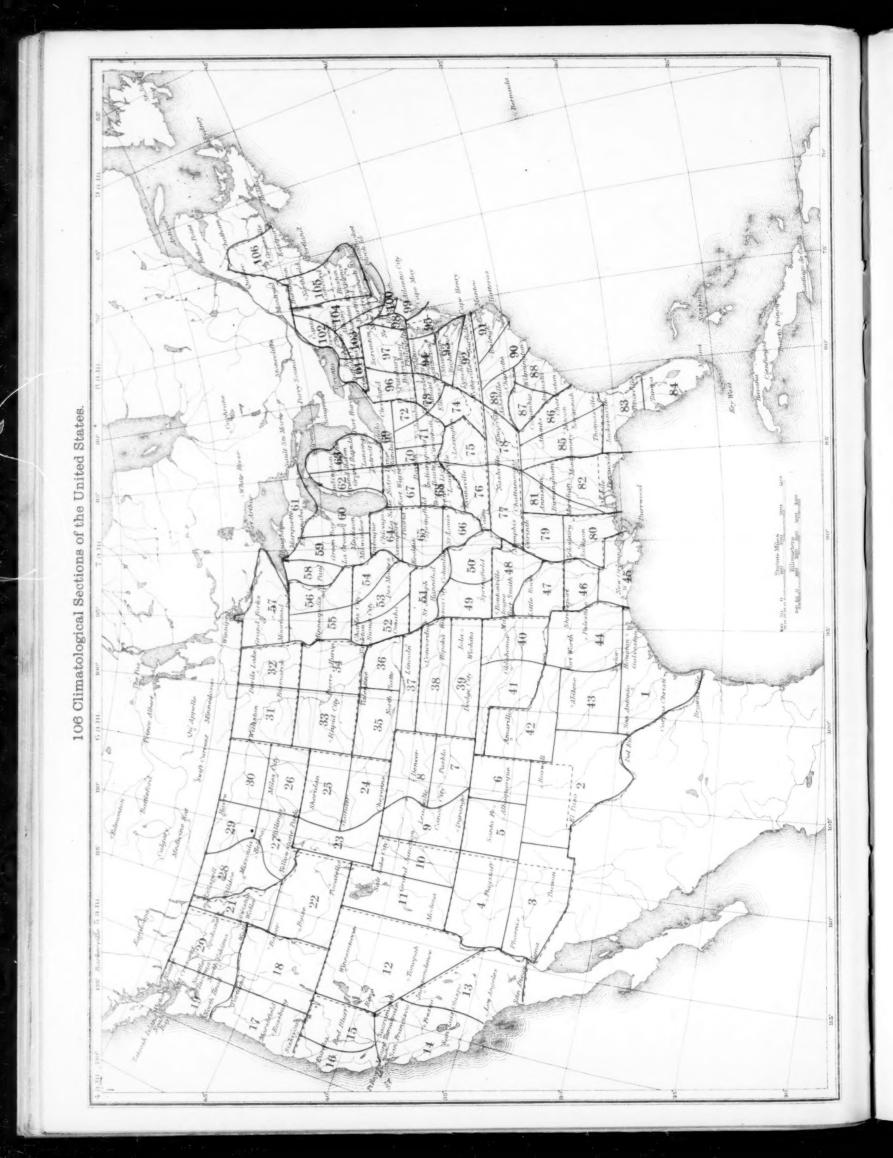
		Total o	luration.	int of ion.	Excess	ive rate.	before e rate		Dept	hs of p	precipi	tation	(in inc	ches)	durin	g peri	ods	time	indica	ited.	
Stations.	Date.	From-	То-	Total amount of precipitation.	Began—	Ended-	Amount b excessive began.	5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min-	50 min.	. 60 min.	80 min.	100 min.	120 min
Macon, Ga	23 1-2			1.98 0.90				*****				****		****				.33			
Madison, Wis	17	*********		0.72														(*)	1		
Memphis, Tenn Meridian, Miss	3-4	6,40 p. m.	9.15 a. m.			11.29 p. m.	.39	.12	.37	.41									*****		
Miami, Fla	. 17	7.55 p. m.	10.10 p. m.	0.62	9.12 p. m.	9.39 p. m.	. 03	. 28	. 32	. 32	. 32	. 44	. 53			10000					
Minneapolis, Minn	16-17	D. W. a. m.	**********	0.76		217 0 70	.08	.30		.93	1 07										
Mobile, Ala Modena, Utah	2	D. N. a. m.		T.	1.55 a. m.	2.17 a. m.			.72		1.07	1.14						T.			
Montgomery, Ala Moorhead, Minn	24		3.15 p. m.	1.73	9.59 a. m.	10.30 a. m.		. 05	.21	. 46	. 54	.61	. 67					100000			
Mount Tamalpais, Cal Mount Weather, Va	14			0.68	*******						*****			*****							
Nantucket, Mass	30	8.40 a. m.	8.20 p. m.	1.56	5.29 p. m.	5.44 p. m.	. 68	. 21	.48	. 57	*****					*****	****		****		
Nashville, Tenn New Haven, Conn	5 30			1.20 1.52					*****					*****							1000
New Orleans, La	4 5	8.55 a. m. 7.27 a. m.	10.35 a. m. 4.30 p. m.	0.72	9.04 a. m. 7.04 a. m.	9.16 a. m. 7.33 a. m.	.02	. 30	. 50	. 66	.64	.75	79								
New York, N. Y				1.17										*****	*****	*****		. 25	*****		
Norfolk, Va	4-5	9.05 p.m.	D. N. a. m.	2.49	12.40 a. m. 1.30 a. m.	1.30 a. m. 2.20 a. m.		. 05	.12	.14	. 24	. 34	. 97	1.06	1.12	1.19	1.23	*****			
Northfield, Vt	30			0.52	2.20 a.m.	2.49 a. m.		1.42	1.52	1.62	1.74	1.88	1.94								
North Head, Wash	24			0.92		*********		*****										. 27	*****		
North Platte, Nebr Oklahoma, Okla	1	*********	**********	0.32				*****	*****		*****										
Omaha, Nebr Oswego, N. Y	12					**********															
Palestine, Tex Parkersburg, W. Va				0.66		*********					*****		*****					. 29	*****		
Pensacola, Fla	26-27	9.40 p. m.	3.50 a. m.	1.23	11.52 p. m.	12.36 a. m.	.19	.09	. 23	. 33	. 39	. 48	. 55	. 60	. 67	.72		*****	*****		
Peoria, Ill														****		****	****	.16	*****		
Phoenix, Ariz	8			0.69	*********	***********					*****					****		. 19			
Pierre, S. Dak Pittsburgh, Pa	5	*********		0.87							******						****	. 25			
Pocatello, Idaho Point Reyes Light, Cal			**********			**********												.10	*****		
Port Huron, Mich	5		***********	0.24											*****			. 21			
Portland, Me Portland, Oreg	29			2.23														.28	*****		
Providence, R. I Pueblo, Colo																*****		. 44	*****		
Raleigh, N. C												*****	*****		****			.29			
Rapid City, S. Dak Reading, Pa	30			1.44					*****		*****					*****		.37	*****		
Red Bluff, Cal Reno, Nev																		.29			
Richmond, Va Rochester, N. Y	30			0.41												****		.29	****		
Roseburg, Oreg Roswell, N. Mex	24			0.65												*****		.21	*****		
Sacramento, Cal			***********															.05			
St. Joseph, Mo St. Louis, Mo							*****			*****			*****			****	*****	. 15	*****		
St. Paul, Minn	16-17		*********	0.56					*****							*****		*			
Salt Lake City, Utah San Antonio, Tex	3			0.60			*****			******			*****	*****		*****	*****		*****		
San Diego, Cal Sand Key, Fla	15 17		5.45 p. m.		5.26 p. m.	5.35 n. m		0.00	0,30	*****	*****				****			. 03			
Sandusky, Onlo	29-30			0.48													*****			*****	
San Francisco, Cal San Jose, Cal	14 14			0.57 0.25	***********		*****		******		******	*****	*****	*****			*****	.30			****
San Luis Obispo, Cal Santa Fe, N. Mex	14 26			0.14							*****	*****						.09			
Sault Ste. Marie, Mich	1-2	D. W. o. m		0.60	£ 10 m m			.10	200									*			
Savannah, GaSeranton, Pa	27			0.84	********	5.40 p. m.	*****		. 29		.48							*	*****		
Seattle, Wash	* *			0.58	***********						******								*****		
Shreveport, La	23		*********	0.82 0.50														. 31			
Sioux City, Iowa Southeast Farallon, Cal	14			0.59	***********								****					.24			
Spokane, Wash	29 16-17		*********	0.49	******						*****										
pringfield, Mo	4			0.13 0.47														*		****	
Syracuse, N. Y	17			0.46																	
Tampa, Fla Tatoosh Island, Wash	31 28-29			0.42 1.39							*****										
Paylor, Tex	3	6.39 a. m.	D. N. p. m.	1. 43 0. 35	2.18 p. m.	2.37 p. m.	.77	. 26	.38	. 48	. 54										
Thomasville, Ga	31			2.70														. 61			
Toledo, Ohio	2 4			0.40 T.							*****							T.			
Topeka, Kans	1 4			0.31								*****						.11			
icksburg, Miss	2	D. N. a. m.	6.02 a. m.	0.51	3.20 a. m.	3.28 a. m.	.02	. 28	.41												
Walla Walla, Wash Washington, D. C				0.64																	
Wichita, Kans	1			0.77			*****	****										. 31			
Wilmington, N. C	18			0.50														. 25			
Winnemucca, Nev Wytheville, Va	4 .			0.45							******							.17			
Yankton, S. Dak Yellowstone Park, Wyo	29-30			0. 47 0. 52														*			
Laurence Laik, WyU	au 00 .			J. UA				*****								*****	*****				

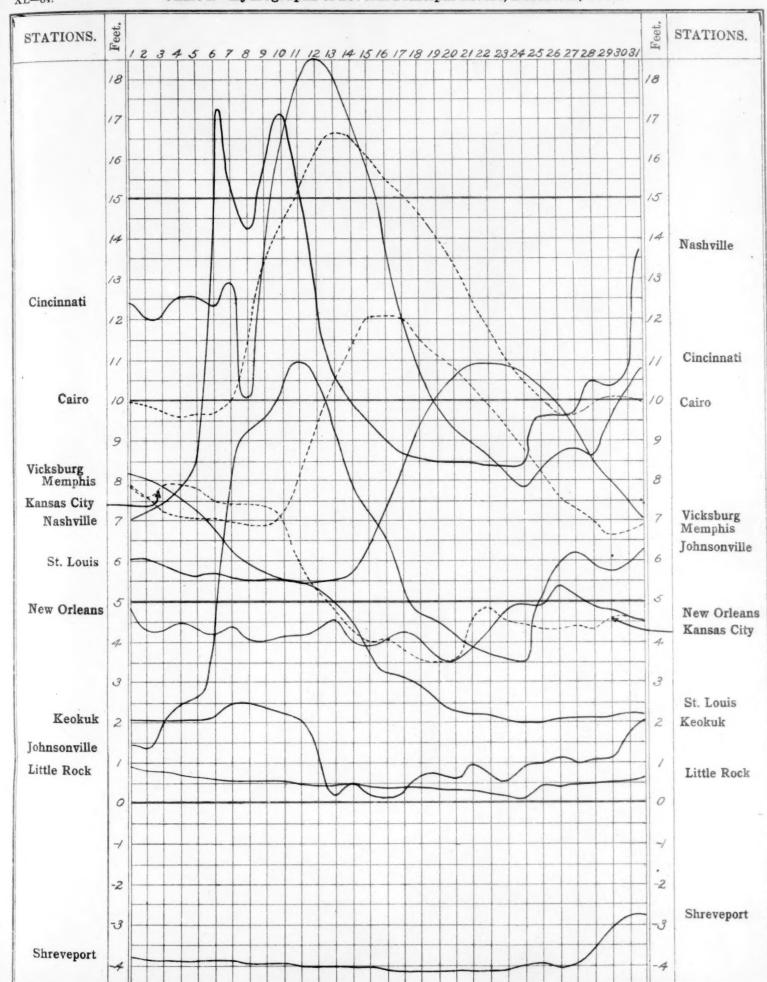
Table III.—Data furnished by the Canadian Meteorological Service, December, 1912.

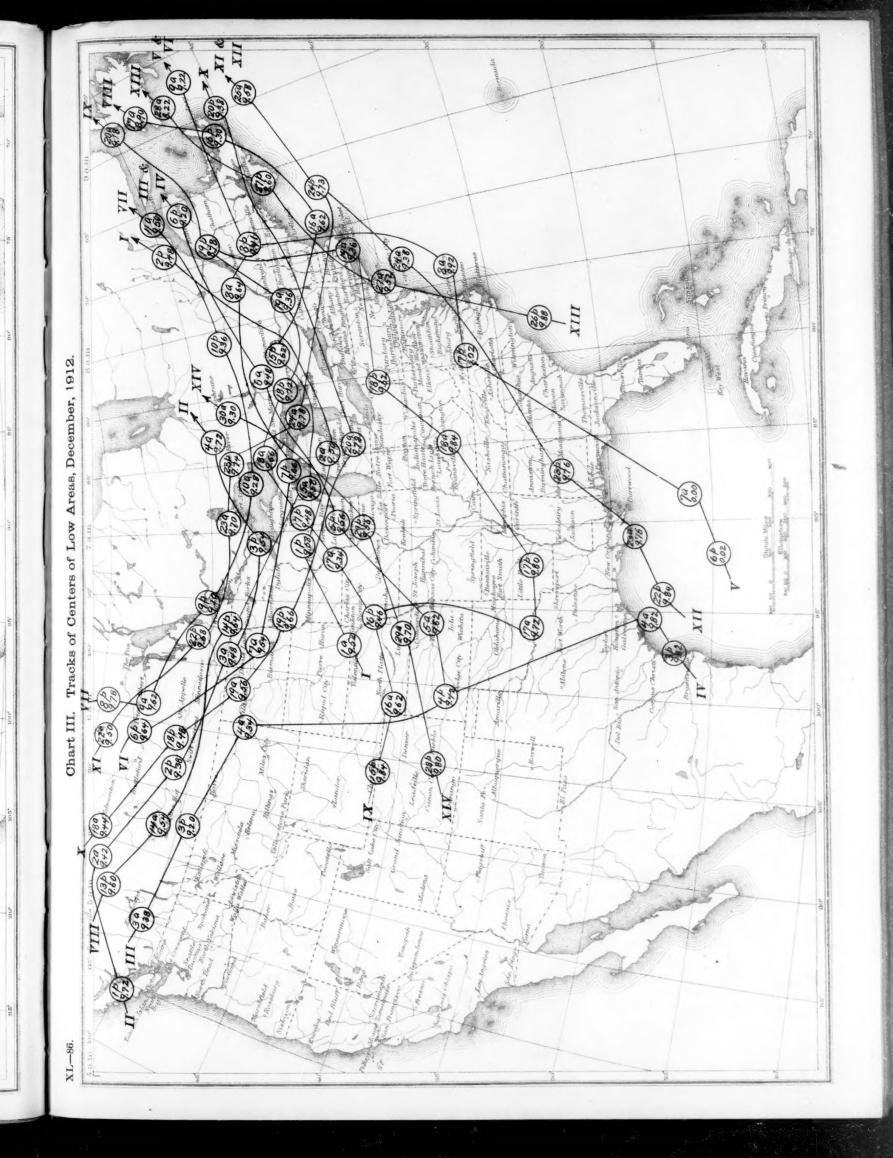
	Pres	sure in inc	ches.			Tempe	rature.			P	recipitation	n.
	Station reduced to 24-hour mean.	Sea level reduced to 24-hour mean.	Departure from normal.	Mean max.+ mean min.+2.	Departure from normal.	Mean maxi- mum.	Mean mini- mum.	Highest.	Lowest.	Total.	Depar- ture from normal.	Total snowfall.
CANADIAN STATIONS.												
St. Johns, N. F. Sydney, C. B. I. Halifax, N. S. Grand Manan, N. B.	29.78 29.78	29.71 29.82 29.89	12 07 07	29. 9 30. 8 30. 5	+ 1.2 + 2.6 + 2.9	36. 7 38. 4 38. 9	23. 1 23. 2 22. 1	50 58 55	8 6 5	6. 00 6. 26 8. 41	+0.97 +1.63 +3.29	9. 0 9. 1 19. 1
Yarmouth, N. S. Charlottetown, P. E. I. Chatham, N. B. Father Point, Que Quebec, Que	29. 86 29. 79 29. 84 29. 83 29. 55	29, 93 29, 83 29, 87 29, 86 29, 89	05 11 07 09 12	34.0 27.2 20.1 17.2 18.6	+ 3.3 + 2.9 + 3.1 + 1.8 + 3.4	41. 0 34. 1 29. 0 25. 2 26. 2	27. 0 20. 2 11. 2 9. 2 10. 9	56 50 46 44 49	13 0 -13 -10 -12	6. 21 6. 83 3. 16 1. 92 3. 02	+1.17 +3.17 -0.06 -0.91 -0.67	7. 8. 9. 10. 17.
Montreal, Que Stoneeliffe, Ont. Ottawa, Ont Kingston, Ont. Oronto, Ont. White River, Ont	29, 23 29, 66 29, 64 29, 55	29. 86 30. 00 29. 96 29. 95	15 02 08 10	18. 2 22. 8 30. 6 32. 6	+ 3.2 + 5.8 + 6.9 + 5.6	25. 9 30. 0 38. 0 38. 7	10. 5 15. 7 23. 2 26. 5	40 50 54 56	-10 - 1 5 11	1.07 2.31 2.43 1.85	-1. 42 -0. 60 -0. 81 -1. 06	6. 17. 7. 6.
Port Stanley, Ont. Southampton, Ont. Southampton, Ont. Port Arthur, Ont. Winnipeg, Man. Minnedosa, Man. Qu'Appelle, Sask. Medicine Hat, Alberta. Swift Current, Sask. Calgary, Alberta. Banff, Alberta.	29. 31 29. 17 29. 17 29. 12 29. 01 27. 97 27. 50 27. 53 27. 25 26. 24 25. 22	29. 97 29. 89 29. 85 29. 88 29. 87 29. 83 29. 85 29. 91 29. 85 29. 97	101214141517120809 +.03	31. 6 30. 4 25. 7 15. 4 12. 5 10. 2 14. 4 29. 4 22. 4 28. 4 21. 0 21. 8	+ 3.2 + 3.7 + 4.5 + 2.2 + 8.4 + 4.5 + 7.0 +11.2 + 6.4 +10.2 + 1.9 + 8.7	38. 0 35. 9 34. 5 24. 6 19. 9 18. 8 24. 2 40. 3 31. 5 38. 1 27. 4 31. 1	25. 2 24. 8 16. 9 6. 3 5. 1 1. 5 4. 6 18. 5 13. 4 18. 8 14. 5 12. 4	52 56 52 40 39 36 39 52 46 51 38	10 10 -5 -14 -16 -23 -17 -10 0 -4 -18	3. 37 3. 24 7. 80 0. 78 0. 78 0. 84 0. 94 0. 36 0. 38 T. 0. 37	+0.95 -0.74 +3.32 -0.09 -0.13 +0.22 +0.42 +0.19 -0.40 -0.59 -0.84 -0.60	11. 16. 52. 6. 7. 8. 9. 3. 3. T.
Prince Albert, Sask Sattleford, Sask Kamloops, B. C. Victoria, B. C. Barkerville, B. C. Hamilton, Bermuda	28. 68 29. 97 25. 52	29. 98 30. 07 29. 92 30. 23	+.04 +.10 +.04 +.11	29. 8 41. 3 21. 0 65. 6	+ 0.9 + 0.1 + 0.1 + 0.9	35. 7 44. 8 26. 9 71. 0	24. 0 37. 8 15. 2 60. 1	46 50 36 76	11 31 2 56	0. 54 5. 84 6. 01 2. 22	-0.24 -2.14 +2.84 -2.27	4.

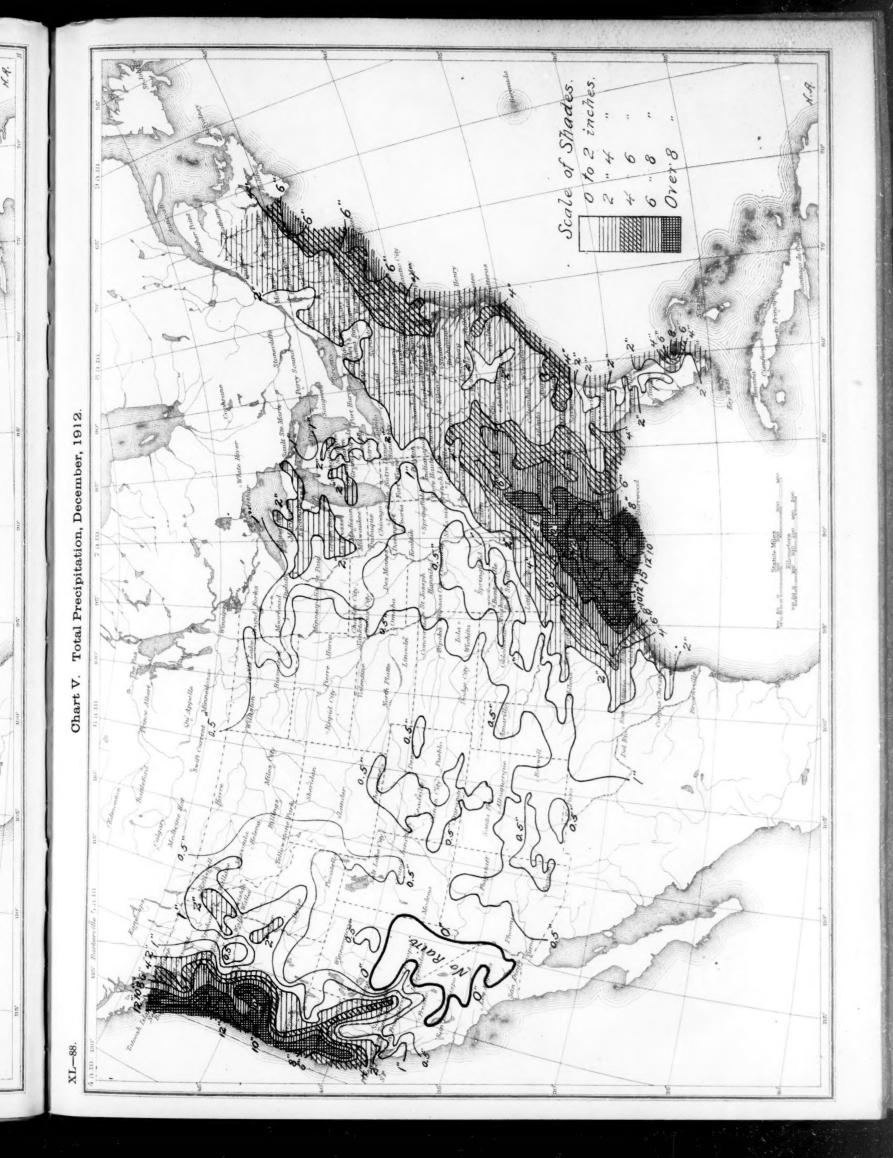














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